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To promote better quality research, application of research to action programs, and effective instruction in colleges and universities, a manpower research institute was held at Iowa State University, June 12-16, 1967. Major papers relating to research programs covered: (1) an interdisciplinary approach, (2) the U.S. Department of Labor programs, (3) the U.S. Office of Education programs, (4) programs in the hard-core ghetto, and (5) health programs. Speeches related to regional and area development covered: (1) multi-county functional economic areas, (2) program planning, (3) area vocational schools and community colleges, and (4) state research coordinating units. Topics related to psychological research were: (1) psychological theory and manpower, (2) psychological determinants of occupations, (3) organizational theory and manpower withdrawal, and (4) experimentation in organizational behavior. Discussion of sociological and anthropological research included: (1) changing conceptions of work, (2) the older citizen, and (3) the office as a new type of mass production factory. Methodology and research trend topics included: (1) using computers in searching for jobs and employees, (2) population surveys, (3) allied health manpower, and (4) research needs. Manpower research fellowships were awarded to 29 full-time college and university professors. (DM)

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AN INTERDISCIPLINARY APPROACH TO MANPOWER RESEARCH

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AN INTERDISCIPLINARY APPROACH TO MANPOWER RESEARCH.

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PREFACE

The chapters in this publication developed out of a one-week Summer Manpower Research Institute, sponsored by the Industrial Relations Center of Iowa State University and held at Ames, Iowa, June 12-16, 1967. The Institute was supported through the manpower institutional grant program of the U. S. Department of Labor's Manpower Administration.

The Manpower Research Institute had three general goals:

1. To bring together established as well as promising scholars in the social sciences in a one-week symposium for the purpose of promoting more manpower research (and better quality research) at colleges and universities in the Great Plains States region.

2. To promote the application of research to action programs in the manpower field.

3. To contribute to the effectiveness of instruction in colleges and universities through an interdisciplinary approach in the study of manpower problems and issues.

A unique feature of the Manpower Institute was experimentation in interdisciplinary sessions involving not only a variety of academic disciplines but also major action agencies involved in manpower and human resources development. Among the guest lecturers were experts responsible for federal programs in six major federal programs in six major federal agencies at the national and regional levels, a member of the state department of education, a private research consultant, and representatives from four universities in a total of six social science disciplines.

Manpower research fellowships were awarded to 29 full-time college and university professors. These represented 10 states and 24 institutions of higher education. The breakdown in relation to the social sciences included: 11 economists, 3 psychologists, 6 educators, 2 anthropologists, 1 historian, 5 sociologists, and 1 industrial engineer.

Lecturers and participants were asked to discuss the application and potential contribution of their respective disciplines to current problems of manpower and human resource development. Specifically, each lecturer and participant was given the charge to study and discuss:

1. What the social sciences were doing in relation to research on:
    a. Individual, small group, and large group behavior which was relevant to the general theme of "manpower."
    b. Our knowledge of how skills may be imported through training and education.
    c. How organizations interact to carry out programs.
    d. How "barriers" to employment arise, and how these "barriers" can be removed.
2. What the "frontiers of knowledge" are in each of the social science disciplines.
3. Possible areas of "cross-fertilization" among the social sciences.
4. The implications of new "tools" such as computers, data processing methods, etc. for each of the disciplines.
5. Substantive contributions of the social sciences to manpower and human resources development.

The five-day institute was structured to present current research programs (and research needs) of four major federal agencies on the first day. On the second day discussion was focused upon regional and area development--from both the economist's and the educator's point of view. Manpower from the point of view of psychology was scheduled for the third day's sessions. Psychological theory and manpower research, organization theory, and research on occupational choice and managerial assessment were discussed. The fourth day was structured to present the sociologist's and anthropologist's views of the "world of work." The role of culture was discussed--in contemporary society as well as in contrast to cultures of other parts of the world. The fifth and last day emphasized the application of computers to employment and counseling, and the potential use of the institute, regional administrators discussed problems and research needs of action agencies--at the point of contact between implementation of national policy and development of the community's manpower resources.

Neil A. Palomba and
Edward B. Jakubauskas

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Chapter 1

An Interdisciplinary Approach to Manpower Research

Neil A. Palomba and Edward B. Jakubauskas

In its unrefined state, the social phenomenon exists in an intermingled and interdependent form. In seeking a better understanding of society in all of its complexities, man abstracts and compartmentalizes knowledge into more manageable academic disciplines. Knowledge is filtered through the "lens" of the social scientist's particular discipline as he addresses himself to problems of resource allocation, learning, cultural change, and other discipline-oriented criteria.

This filtration process of the social scientist permits the rapid growth of man's understanding of his social environment. Tools of research are used more readily to organize data in a more efficient manner, hypotheses are formulated and tested, and man's knowledge grows at a rapid pace.

For the policy maker concerned with amelioration of problems, and for the individual interested in a wider understanding of social change, the separate "strands" of discipline-constrained knowledge must be woven into a larger fabric to permit a fuller picture of the complexities in society. Hence analysis of individual disciplines must be followed by a multi-disciplinary (or interdisciplinary) synthesis and cross-fertilization of ideas.

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The papers in this publication are an attempt to bring together various social science disciplines centered around the general theme of manpower and human resources development. The papers are oriented within a particular discipline (or policy area); yet each paper is concerned with man in employment relationships--either preparing for work, choosing an occupation, actively engaged in the labor force, or withdrawing from the world of work.

The scope of each paper is defined in relation to the special research interest and expertise of the particular social scientist. It is not intended that the papers in this collection should serve as the definitive work on interdisciplinary research--but rather as a pioneering attempt and first step in creating a dialogue between social scientists on the one hand and the research and action worlds in manpower and human resources development on the other.

NEED FOR INTERDISCIPLINARY RESEARCH

In the following twenty-one papers the single major point that continually recurs is the need for interdisciplinary research in the manpower field. No one or two disciplines can ever hope to answer the major questions that we encounter in the world of work. At the minimum the anthropology, economics, education, management, psychology, and sociology sciences will have to cooperate in order to advance manpower research and solve the important manpower problems.

In Chapter 2 Joseph Epstein discusses the interdisciplinary nature of the Department of Labor staff and how this staff tries to further cooperative research in manpower. Robert Herman in the next chapter stresses the same interdisciplinary theme from the point of view of the educational community playing a larger role in the manpower development program by cooperating with the behavioral science researchers.

An excellent example of an interdisciplinary approach to a specific problem is the paper by Dr. Thomas Lyons, where the question of manpower withdrawal is examined through the microscope of four different sciences. While Dr. Lyons is a psychologist he surveys the economics, management, and sociology literature, in addition to the psychology publications, in attempting to shed some light on manpower withdrawal.

While we could go through every paper and catalogue the various authors' appeals for interdisciplinary cooperation, it is more fruitful to briefly examine the contents of each paper and see if we can sketch a manpower research framework within which each discipline can contribute to solving manpower problems.

MANPOWER RESEARCH TODAY

Epstein states that in the manpower field the whole journey into work must be examined, and so we will look at manpower research starting with conceptions of work and going through job attachment, some specific problem areas, job withdrawal, and methodology.

Conceptions of Work

In Chapter 14 Professor James Whittington concerns himself with the ways of thinking about work. He states that industrialism around the world is not likely to be replication of the western rational approach to work but rather some new adaptation. The available data seem to indicate that a transition to industrialism can be accomplished most effectively when the changes are based on and grow out of the patterns of social interaction previously existing in the society. Thus the anthropologist, according to Professor Whittington's paper, would argue that all of us in the manpower field who are in any way concerned with exporting industrialism to another society should direct our concern toward the indentification of basic elements in the pre-existing social system and the problems of conflict likely to arise when new systems of work are introduced in the context of older relationships.

Turning from the international to the national arena, Dr. Harry Cohen looks at the changing concepts of work in the United States. He argues that the United States is changing to a fun-oriented society leading to specialists without spirit, sensualists without heart, lazy workers, and rioters; and that all the disciplines will have to labor together if we are to change this in order to repair the system that made things important and people secondary.

Dr. Jack Siegman's paper gives us a very specific example of a changing concept of work. He views the large white-collar office system of today operating as factories in social structure. These office systems are social systems of work which are so rationalized that each worker performs a specific task or set of tasks interdependently with others so that in combination they all contribute in a rapid and efficient manner to the production of a finished item. Dr. Siegman goes on to explain some of the consequences of having white-collar factories where workers perform mechanical procedures.

Job Attachment

The journey into work for an individual usually means preparation for work through education and training and then job selection. In the area of education Robert Herman believes that education should be able to achieve the goal of every person terminating the public school system with a saleable skill, but to do this the manpower research people and the educators must cooperate. One prime example of this needed cooperation would be interdisciplinary research to perform job analysis and allow the educators to develop curricula which will be more productive in training a flexible manpower supply, especially in our labor shortage occupations.

Chapters 8 and 9 of this book examine the role of area vocational schools, area community colleges, and state Research Coordinating Units in manpower developments. Dr. Trevor Howe discusses the area schools and colleges in Iowa, including the services they will provide, their curriculum development, and financial structure; Dr. Kenneth Wold discusses the Research Coordinating Unit in Iowa. This coordinating unit undertakes to stimulate needed interdisciplinary research in the area of employment opportunities and educational programs.

The topic of job selection can be divided into the selection of a particular employee by an employer and the selection of an occupation by workers. In his paper, Dr. Edwin Henry looks at the means some managements have developed for identifying high potential new employees early so that they may get maximum exposure to challenge and stretch their abilities. Dr. Henry points out that this approach is also very important in the case of the culturally disadvantaged and minority groups. The key to good manpower planning is recognition of the fact of individual differences and the necessity to discover and optimally weight relevant dimensions of human nature.

In Chapter 11 Dr. Donald Zytowski discusses occupation selection by workers from a psychological point of view. He explains why the psychologist is unwilling to assume that labor distribution is entirely the consequence of the demand of the labor market. After all, when the characteristics of people in a single occupation are analyzed it is usually found that they are more like each other than like persons in other occupations.

Dr. Charles Holt, in Chapter 18, examines the importance of efficiently matching workers and jobs by discussing how helpful computers could be in the search for jobs and employees. There are two very different aspects of the search process: the worker wants to maximize his satisfaction, and the employer wants an employee with maximum productivity. Both aspects must be satisfied for an offer to be made and accepted.

Specific Problem Areas

Within the manpower field there are a great many specific problem areas, two of which are the disadvantaged or hard-core unemployed and the health occupations. Dr. Walter Williams details a series of tentative hypotheses concerning the basic manpower problems of the disadvantaged in the urban ghetto and the new manpower and manpower-related programs being developed to attack these problems. This paper also discusses in general terms the design characteristics required for relatively successful ghetto manpower programs; ghetto residents need a work setting in place of classroom training, and they need interpersonal support services.

A second discussion of the disadvantaged is contained in the last chapter. David Knuti points out that the Office of Economic Opportunity is in the manpower field not because of responsibility in a particular area but because of responsibility to a particular clientele (the disadvantaged). He discusses the range of services necessary for success with the disadvantaged, and he lists the areas where interdisciplinary research is needed.

The area of health manpower is very important today due to the shortage of trained health personnel. George Inada's paper details the grant and research programs of the Bureau of Health Manpower in the United States Public Health Service. It is the bureau's responsibility to help stimulate the development of health manpower resources so that needed health services are available to all Americans.

John Goltman examines the health manpower field from a second viewpoint. As a representative of the Division of Allied Health Manpower he discusses the division's responsibility to provide to the degree possible a supply of trained, qualified subprofessionals in order to extend the effectiveness of the professionals.

Job Withdrawal

In a discussion of job withdrawal there are at least two aspects to be examined. The first is known as labor turnover (an employee voluntarily changing his job), and the second is permanent job (labor force) withdrawal (an employee leaving the world of work). As mentioned earlier, Dr. Lyons' paper is an interdisciplinary attempt to examine manpower withdrawal of the labor turnover variety. He ends his discussion with a listing of research needs which must be satisfied before we can hope to fully understand labor turnover.

Another interesting attempt to explain labor turnover (this time in a less general approach) is offered in Dr. Siegman's paper on automation and the modern worker. In the white-collar factories the lower level employees receive little satisfaction from their jobs, and it is these jobs which have a high turnover rate.

In Chapter 16 Dr. Ward Bauder looks at job withdrawal of the permanent variety. Specifically, Dr. Bauder is interested in studying the voluntary withdrawal from the labor force of individuals age 50 and over. The paper reports on research which is still in progress, and thus some of its conclusions are subject to the further refinement of more longitudinal data.

Methodology

While almost every paper in this book deals in some manner with manpower research methodology, four chapters are primarily concerned with what we can generally classify as manpower methodology.

Dr. Karl Fox presents his functional economic area idea in Chapter 6. The functional economic areas are home-to-work commuting fields and relatively self-contained labor markets. Because of their relative self-containment with respect to the home-to-work commuting trip and to most resident-oriented retail and service activities, these areas should be an ideal unit for regional social accounts. Thus Dr. Fox's approach may prove to be a method to rationalize many of our current manpower programs; that is, a national system of functional economic areas could be used to appraise the regional impacts of manpower programs.

A second approach in this general area is the paper by Dr. Martin McGuire. This paper is more specific than the previous one. It describes the work undertaken by the Economic Development Administration along the lines of projecting area economic characteristics. Employment and population projections were made for 3,071 counties in the United States under different assumptions about the national average unemployment rate. This work was done to help the government in its mission of alleviating economic distress in low income and high unemployment areas.

Chapter 13 by Dr. Aaron Lowin is completely concerned with the arguments both for and against using the experimental method in organizational behavior. The experimental setting is one in which the observer (experimenter) exercises his arbitrary power to cause events to occur as he would like them to occur. The paper stresses the point that the problem of utilizing experimental data for some other end can be treated as one instance of extrapolating from any setting to some other.

Dr. Joseph Morton's paper discusses the current population survey as a new method for supplying valuable microdata to manpower researchers. These data will be very worthwhile for generalizable analysis along nearly any dimension of variables, provided they are at all included in the current population survey schedule. Dr. Morton emphasizes the need for the creation of an information storage and retrieval system incorporating all the desired microdata, since economic constraints make it impossible to publish all the microdata.

FUTURE RESEARCH NEEDS

Almost every author in this collection of papers has one or more suggestions for future manpower research. An attempt to summarize them in a brief statement is probably best made by saying that our manpower structure must be made into a manpower system. This statement is taken from Arnie Solem's paper. Mr. Solem lists four major areas of needed manpower research--defining the characteristics of the disadvantaged, developing new tools and methods of bringing people to the point of employability, testing the effectiveness of current programs, and studying how employers develop their employees. Moreover, a manpower research center should be established in each employment security region. These centers can train outreach personnel and provide valuable research opportunities. Research should also be undertaken to identify the real entrance requirements of jobs, the early development of vocational interests in youngsters, and the problems employers face when they hire the disadvantaged.

To the above research needs listed by Arnie Solem could be added some of the needs mentioned by David Knuti and Joseph Epstein. Mr. Knuti believes that we must research the results of various mixes in different manpower programs, and the extent and types of opportunities for training in industry; while Mr. Epstein wants to see more research into mobility in our economy and into our vocational education system.

While we could go on with a listing of research needs in the manpower field, the main point we come back to is the point with which we started--there is a great need for interdisciplinary research in this field if we seriously expect to answer today's important manpower problems.

I. Research Programs

The first paper in this section, written by Joseph B. Epstein, discusses the manpower research programs of the U. S. Department of Labor. The Labor Department's various grant programs are examined, as well as its projects which look into the questions of the supply of manpower and the demand for manpower. The author stresses the fact that the whole journey into work must be examined, with emphasis on the employment problems of minority groups and the non-college bound youngsters.

Robert Herman's paper stresses the need for the educational community to play a larger role in the manpower development program. Herman believes that interdisciplinary research is needed to perform job analysis and allow the educators to develop curricula which will be more productive in training a flexible manpower supply--especially in the labor shortage occupations.

The third paper in this section, written by Dr. Walter Williams, discusses a series of tentative hypotheses concerning the basic manpower problems of the urban ghetto and the new manpower and manpower-related programs being developed to attack these problems. Dr. Williams sketches the design characteristics required for relatively successful ghetto manpower programs and speculates briefly on the consequences of manpower programs for the ghetto.

The last paper of this series discusses the research programs of the Bureau of Health Manpower in the United States Public Health Service. George Inada dissects the health manpower planning area into supply analysis and projection, demand analysis and projection, and matching supply and demand. Inada concludes his paper by outlining some needed health manpower research programs.

Chapter 2

Manpower Research Programs of U.S. Department of Labor

Joseph B. Epstein

The research program of the U.S. Department of Labor has three major objectives: (1) improvement of the operation of the department itself; (2) the search for new perspectives and approaches; and (3) to give some early warning system of problems to come. They are not really independent. They are more interrelated. In a sense none of these objectives is new nor does any involve new directions. They all involve problems and they all involve work. While each of the problems has been attached in work done before, we hope that new approaches and new insights will give us at least some relief before new problems engulf the situation all over again.

The program itself is one of the smaller programs in Washington. I have a feeling that we are down in the 999 category or "not otherwise classified" in terms of the amount of money that is specified for our projects. Still we think that manpower is an important program, and we are delighted to see this kind of activity burgeoning throughout the country. Unless we do more of this, the field of manpower economics, which has been concerned too long with purely structural problems, will never develop into what I think it has to be; namely, part of the body of the general theory of economics with emphasis on and examination of the manpower problems--not just the structural problems of collective bargaining, wage determination, and so on. These are important. But we will never make real progress in manpower problems unless we incorporate

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them philosophically and intellectually into the whole body of economic thought. This kind of a meeting is a major step in that direction.

The program research conducted or administered by OMPER attempts to answer manpower problems which are or are expected to be major sources of concern to the nation. The program of the department was strengthened and expanded under the Manpower Development and Training Act of 1962, Title I of which provided for a study of the adequacy of manpower programs in the country and laid the foundation for a comprehensive external manpower research program. In providing the resources for this research, the Act itself represented a major new direction in federal research. Various amendments to the Act have broadened the scope of our efforts. The Act has been expanded in terms of the grant programs. The largest part of our financial support for external research is devoted to the contractual research program. Basically, this program is intended to support the research activities of public and private, profit and nonprofit organizations where a work product prescribed in a contract is the object of the investigation. The proposals which are received under the contract program are reviewed by technicians of the department and by those who are invited to comment on them because of their expertise in the particular subject of the proposal. Projects whose total costs are anticipated to exceed $100,000 are further reviewed and evaluated by panels of academicians and others who forward their recommendations to the director of the Office of Manpower Policy and Evaluation and Research.

The new grant authority provides a much greater flexibility than previously existed in the research program. The department is authorized to provide research grants to individual scholars, universities, and other nonprofit organizations. Two parts of the grant program are included within what is now known as the "small grant program." These are the support of doctoral dissertations or the support of faculty doing work so that the university or college can release some of their time to the investigation of pertinent manpower problems. I might add that in both of these situations we would welcome many more grant proposals than we have received. The panel that has reviewed these proposals has been very rough, but an innovative or provocative idea will have a good chance of being considered for support. We are in the process of trying to stimulate exciting new ideas, and I think the small grant program will be the source of many new ideas. The contract research is important, affecting operations in a very basic way, but it is the grant program most frequently utilizing the university framework that will add leaven to the whole research program. Another part of the grant program, the institutional grants, consists of support to universities to help them develop curricula and facilities in the manpower field. We presently support seven such efforts and have great expectations that they will contribute significantly to progress in human resource utilization.

The program of the Office of Manpower Research also includes publication of the Manpower Report of the President. We hope that this annual report can become a major resource for you.

In discussing some of the special programs we have sponsored and supported, I will review some of the economic and manpower events of last year and show how we try to keep current and why the programs of the department in its research efforts have to be related to what is going on and to what we think is coming along. This cannot be done without basic economic information. The year 1966 was one of rapid growth in which new records were set in output, income, and employment. In terms of economic activity, the GNP rose by $58.5 billion, a gain of almost 5.5 percent in real output. Personal income rose even more rapidly by $33.5 billion from $465 billion, or almost 8 percent, over 1965. The growth in output was accompanied by an equally impressive gain in employment and reduction of unemployment. The unemployment rate averaged 3.8 percent in 1966, the lowest in 13 years. Civilian employment averaged nearly 73 million, an increase of 1.8 million over 1965.

Women accounted for fully two-thirds of the nation's 1.8 million increase in employment. Their large gains in the third and fourth quarters reflected the shortage of men in the civilian force to meet job needs. Nonagricultural employment increased by 2.2 million, the largest gain since World War II, mainly in response to heavy business spending on new plants and equipment but also stimulated by defense spending. Increased expenditures by federal, state, and local governments resulted in a gross increase of 1.6 million new jobs last year. Of this, 800,000 were due to federal expenditures alone. This included 400,000 in the military, 200,000 federal civilian, and 200,000 in private industry supplying goods and services purchased by the federal government. This was quite a shift from previous years when federal employment was virtually stable and where most of the increase attributed to government was in state and local government.

Employment in the manufacturing blue-collar occupations continued to expand at a faster rate than in the two preceding years. This accelerated growth, after a long period of little or no growth, provided employment opportunities for workers such as laborers who normally suffer some of the highest unemployment rates.

Many have said that our society is increasingly one of service workers. To a great extent this is true. At the same time they have also said that employment in manufacturing was virtually on a plateau--that technological change is so great that we could not really hope for much increase in employment opportunities in this sector of the economy. The claim has been made that we are becoming so service-oriented that goods production employment will not contribute significantly to employment. Last year's growth indicated that when the overall rate of economic growth is high enough we do have increases in employment in manufacturing. Are we really so uninterested in goods that we can generalize from the experience of 1955 through the 1963-65 period and say that employment in manufacturing or other goods production is really not due for major increases or that increases in productivity will offset increased output? We do not know. Certainly the record of last year tended to disprove that. Is it really a question of basic changes in the economy, or is it a function of how well we organize ourselves for sufficiently rapid economic growth?

The first quarter of 1967 indicated a leveling-off in the pace of our economic activity. The real GNP in the January-March period declined a little from the fourth quarter of 1966, and this decline was in sharp contrast to the rapid increase of the fourth quarter of 1966. A later figure shows some decline in the civilian labor force since the beginning of the year.

What does this mean for new research directions? There is no doubt that the sustained business advance of the past six years has accomplished much in the way of relieving our outstanding manpower problems. However, the fact remains that despite overall economic growth and the lowest unemployment rate in the last 13 years, far too many Americans are living in areas of the country outside the mainstream of economic affluence. To meet these problems, the department will continue its research programs to emphasize action-oriented projects concerned with people and their roles in the world of work as well as studies of the economy and its institutions for developing and utilizing human resources. We can say that the department's programs are basically concerned with those projects which look into the questions of the supply of manpower vs. those which concern themselves with the demand for manpower, with most studying the characteristics of the supply side.

The department has always been interested in the educational attainment of the work force, the demographic characteristics of the work force. It has concerned itself with discriminatory hiring practices and the disabilities that women and minority groups have suffered in finding employment. However, we cannot resolve the supply problems unless we understand those affecting the demand for labor. While we are not the agency that is charged with the development of monetary and fiscal policy, which in the main sets the economic backdrop against which employment and jobs will occur, the department cannot be uninformed concerning the impact of national policies on employment opportunities. As our examination of economic events proceeds from the larger national picture to states, regions, or cities, we can begin to understand what manpower problems exist below the national level and what the programs should be to alleviate them. We can then begin to match the supply of labor with oncoming needs in the local and state economies where employment actually takes place.

I happen to be an economist, but I am fully aware of the contributions by the other disciplines in arriving at total answers. The department itself has recognized this. We have a research psychologist on our staff. We have demographers. We have several sociologists. So our own research office is in itself an example of the multi-disciplinary approach that we like to see developing further in the country to get answers on various aspects--of which no discipline by itself can give the total answer.

Employment problems of Negro and other minorities are obviously on everyone's mind today. We will never resolve the tension of the cities until we can appropriately train and employ the minority groups in our country in jobs that give them advancement potential--the hope for promotion. We have to find out whether the job aspirations, especially of the youngsters, are realistic with respect to both job opportunities and their own potential. We need to know more about improving their skills, training and motivating them so they will not be lost so early and so early and so frequently from our school system.

This brings in the problem of the whole journey into work of which not only the minority groups but all of us are part. We recognize that the educational systems do not always serve the interest of the millions of youngsters who will not go to colleges. Over 70 percent of our children do not go to college. What happens to this 70 percent if they have not had realistic exposure to work in the kinds of jobs the economy offers? We must find better ways of bridging the gap between education--if it means a high school education only-- and work. We need to think more broadly and in new directions if we are to help youngsters make a more meaningful and successful journey into work. We should explore whether new and different educational institutions or institutional arrangements are in order, involving the whole question of area schools and other institutions which are now becoming so important.

The question of mobility has a direct relationship to the question of whether people will get jobs where they live or should go elsewhere to find jobs. How do you tell somebody to move if his place of residence does not provide employment? Do we really know enough about the economic and employment outlook of places to be able to recommend areas for migration? We did an interesting study which indicated that high employment growth in an area does not always lead to reduced unemployment. In California, as well as in other areas, places with the highest growth rates in employment were also associated with no improvement in unemployment. Clearly this meant some in-migration was occurring that was inundating job opportunities. What does this mean for us in terms of the whole question of labor market information? How do you get rid of the "Eldorado Complex" if everyone has the notion to "go to California where things are fine." How do we in a free society get people to think that there are better opportunities elsewhere, or not to go to certain places? Certainly it has to do with the question of information. More than that, it has to do with our problems of estimating job potentials in various local areas. We have not gone far enough in providing adequate area information nor in measuring local manpower needs and supplies.

The mobility question like all manpower problems is quite complex. Differences in "vesting" practices with relation to retirement plans among industries affect mobility in many diverse ways. Further, what are the effects of collective bargaining and the seniority system on occupational mobility? Union practices need further study. We constantly hear about journeymen who are no longer willing to "journey" because of the inflexibility of pension plans. The unique conditions of the construction industry need special studies. The whole question of mobility needs much more work. It involves almost all aspects of manpower development--motivation, reasons to move, reasons why people don't move, where you will tell people to go if you want them to move, and what reason you have for telling people to stay if that is what is indicated.

What can we do about assuring the economic development of places with real economic potential? The Department of Labor is sponsoring research which is aimed at identifying the growth areas in the economy that contribute to more rapid increases in employment opportunities. We are also interested in identifying the processes of growth which lead to employment. The questions are simple; the answers are not. How are jobs created in the economy, and where? This basic question can be answered only when more of us in government and more analysts in the field join forces in trying to understand about the location of jobs and the reasons people should invest in and create the job opportunities we are looking for.

Area and regional manpower research and what might be a fruitful approach to it is a question which is gaining increased attention. It is now recognized that an overall rate of growth adequate to reduce unemployment to acceptable levels would not necessarily create or restore acceptable unemployment conditions in many distressed local areas and broad geographic regions although it might improve them. How the situation can be remedied so that every such area and region can move ahead at a faster and more balanced pace, providing employment at acceptable income, represents one of our foremost domestic challenges. Too often the solutions to local and regional problems are presented in polarized terms. In questions relating to these problems, the recommendations are frequently made in terms of taking the people out of the area, buying them a one-way ticket to someplace else, or bringing industry into the area--no matter what the cost--no matter what the subsidy. Obviously the solution in any given place must reflect its inherent economic potential. Hopefully, sufficient restoration of economic growth would result in reduced out-migration and even in some in-migration of persons--particularly with skills necessary to expand the production of goods and services.

There are very few areas of the country which are devoid of any economic value. We must, therefore, develop appropriate economic divining rods to identify the potential of local areas and regions and develop manpower programs for their utilization. The first steps must include better economic information and forecasts relating to these areas and regions. Much of this is applicable to areas like Iowa, which is losing population. What is the best thing for Iowa to do? Is it necessarily to follow the agricultural cycle that it has in the past, or are there economic potentials that are being overlooked? How do we make accurate and meaningful regional forecasts for both economic activity and manpower needs?

Projecting past trends in depressed areas for calculating the economic and employment relationships with the national economy leaves only pessimistic forecasts that are nothing more than blueprints for disaster. We need to know more about the potential of the area rather than its past relationship to the rest of the economy, except as a guide for correcting deficiencies. We need to lay the basis for altering the present relationship between these regions and the national economy, not just to measure that relationship.

Another area in which we have been interested is that of seasonality in employment. The President in the recent Manpower Report of the President stated that, to help those workers suffering major seasonality problems, he has asked the Secretary of Labor in cooperation with the Secretary of Agriculture and the Acting Secretary of Commerce to make a detailed survey of seasonal unemployment and underemployment to define ways to deal with these problems. Not unrelated is the further direction to ask the Secretaries of Labor and Agriculture to conduct a study to determine the short-term and future manpower needs and supplies of workers in rural America. Many seasonal workers are in the agricultural sector, but seasonality also affects the construction industry, the tourist industry, and others. One answer to the problem of seasonality may be that of extending the period of employment through technological developments. The tourist season in Washington has undoubtedly been extended by the advent of air-conditioning. It is also a matter of looking for seasonally complementary industries which permit the combination of jobs to facilitate year-round income if not year-round jobs in a given industry.

Recently we have been investigating characteristics of the agricultural labor force. Many growers employing stoop and other hand labor for the cultivation and harvesting of crops have been wondering whether there will be an adequate labor force five or ten years hence. Oddly enough there has been very little work done in the area of future requirements. We do know that technological developments drastically affecting labor needs can come in with startling speed (such as the cotton picker) or very slowly. Technological change might have the effect of reducing employment. It also may create better jobs for those who remain in the industry.

A problem that we have not really looked at--and this is particularly true of the products of the Midwest--is that the world is still hungry.

What is the future labor force requirement of the bread-basket of America? Given the situation in India and other parts of the world, one can hardly say there is an oversupply of food in prospect. Yet the probably course of agricultural labor--overall--in this country is one of redundancy and not a shortage except in local areas.

The Vocational Education Act of 1963 made available several hundred million dollars as a subsidy to the vocational education system in this country. There have been previous assistance programs, but this was certainly a major step forward. The Act, however, made it incumbent on the state education authorities and the state employment agencies to confer with each other so that the curricula of the vocational schools would bear some relationship to oncoming opportunities in employment. I suspect that if no such dialogue existed, the decisions that would be made on the basis of what has been done before would still yield some but not very effective guidance.

We must develop better techniques to make the best and most efficient use of money which is made available. If we can perfect our measures of oncoming employment opportunities so that the educational authorities can better understand their mission, we will guarantee for the taxpayer a much better investment for his money and for America a much more appropriately trained labor force.

Those who are involved in area problems are aware of the area skill surveys which are conducted by various state employment agencies. There are difficulties and weaknesses in this procedure: we do not always know what assumptions the respondents have in mind with respect to national economic trends, and we certainly do not know how they relate their company to whatever trend they do assume. Perhaps there are ways in which companies can improve their projection techniques taking into account economic trends in determining manpower needs. This is being tried in Milwaukee in cooperation with the state employment service. The Wisconsin group is also trying some short-cut procedures which, if successful, will be given to other employment service agencies for use in their own areas. In the agricultural parts of the country better forecasts of employment needs have a double urgency. Not only must the area's employment needs be known, but it is also necessary to know the appropriate nonfarm occupations for which to train youngsters who may be migrating to urban centers for employment.

This means a great deal of additional research. To which cities do they go? One of our current tragedies is the frequency with which nonwhites leaving the South gravitate toward metropolitan areas with almost no training for urban jobs. It shows up in a very strange way in the statistics. In agriculture one is regarded as employed if he works even one hour a week or is even an unpaid family worker. One can live on a farm, contribute almost nothing to the GNP, and be counted as employed. Seemingly there is no unemployment problem. Obviously there are many problems. That person leaving such "employment," going to the city, and finding it impossible to get a job may not show up statistically as an unemployed part of the city work force. If he has not taken the appropriate action to look for a job, he is counted as out of the labor force and he disappears into the "not-in-the-labor-force." Our research has shown that in the age groups where we would expect almost all to be in the labor force, the nonwhite participation rate is much lower than that for the whites. In the older age brackets where the whites have generally reached a retirement level and have acquired enough income to retire gracefully, the nonwhite participation rate seems to be moving ahead of the white rate. This is indicative of the fact that they cannot retire and must continue working.

Another important area which is being given increased recognition is on-the-job training. The department is vitally interested in the whole question of training in industry. Unfortunately here again is a case where we have few facts. Most of the training that does go on can be regarded as safety or orientation training. This is hardly the kind of training we have in mind. The cost of training which really provides additional skills and additional capability for increased income is generally merged with production costs. We find ourselves frustrated in many directions just in trying to get the basic data that are necessary for policy program decisions. Ultimately we will have to do much more along these lines.

There are certain advantages to on-the-job training. It almost always guarantees subsequent employment. It takes the element of industrial roulette out of the practice of pickup training or casual training which frequently exists in industry today. The whole question of inplant training has to be examined to be more fair to the people coming in and more efficient for industry in the long run by providing good and useful workers.

In these not so few remarks I have attempted to describe some of the more important research activities of the department, and in connection with research, a pertinent quote has come to my attention contributed by Kenneth Boulding. "For all our scientific fuss, research is still a blunder-bus; we fire a monstrous charge of shot, and sometimes hit, but mostly not." I hope that we in research can start focusing better so that we hit more often than we miss.

Chapter 3

Manpower Research Programs U.S. Office of Education

Robert B. Herman

The vocational education program in the United States started with the Vocational Education Act of 1917 and was implemented by the George-Barden Act of 1936, but it actually has changed very little during these first 50 years. It was not until the Vocational Education Act of 1963 was passed that we really began to focus on finding what new roles vocational education might be playing in the lives of the youth of America. Until that time most of the money was spent for operational programs in home economics, agricultural education, business and distributive education, trade and industrial education. We have been operating in vocational education without spending any real amounts of money for research, for demonstration, for experimentation, or for future planning. The failure to examine the future implications for our educational programs has held education back in its progress toward meeting the needs of the labor market and in satisfying the needs of youngsters who are non-college-bound--who will be entering the world of work directly from their 12 years or less of elementary and secondary schooling.

The Manpower Development Training Act of 1962 gave tremendous impetus to vocational educators and others who were working to improve vocational education in this country. It had impact because it showed the way to begin to think about what could be done and how education and training might be used in combination to alleviate some of the critical manpower shortages currently existing in this country. It was not until 1965 that the Division of Adult and Vocational Research of the U.S. Office

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of Education was organized for the purpose of thinking about some of the emerging problems of vocational education.

In 1965 new disciplines were encouraged to think about new methods of vocational and technical education and about the roles that behavioral scientists, economists, sociologists and psychologists might play in the development of more responsive vocational and technical education in our society. At that time the Office of Education sponsored a conference at the University of Wisconsin to discuss occupational data requirements for educational planning. At that conference, labor economists, educators, and psychologists came together. People were chosen for this conference because of their interest in the continuing study of the labor market and its relation to educational programs. That meeting called the Conference on Occupational Data Requirements for Educational Planning, was held in June, 1965, and was conducted under the auspices of the Center for Studies, Vocational and Technical Education, at the University of Wisconsin (a Ford Foundation sponsored center). It is funded not by federal funds but almost solely by the Ford Foundation, and this gives it a great deal of flexibility in its relationships with federal organizations for whom it conducts research programs and conferences.

It was evident to those who participated in the conference that existing information was not being put into full use by educational planners. Available information was not being used in the counseling of students, in the preparation of courses and curriculum materials, and indeed was seldom used at the operational levels of planning vocational education. These findings have exerted influence on the direction and the amount of effort that the Division of Adult and Vocational Research has attempted to focus on these problems. We have attempted to draw the attention of vocational educators and behavioral scientists to the intelligent use of manpower information for planning purposes. There are differences of opinion in the field, and they are reflected in the report of that meeting. One side of the argument is that there is almost too much information available; the other side is that there is not enough information, or that the kind of information available is not precise enough, nor is it directed toward educational problems of students who are terminal at their 12th year of high school or before, or else at the end of two years of community or junior colleges and technical institute programs.

We really have to go to the beginning of the program to formulate our opinion. The Advisory Committee on Vocational Education (designated by the President in 1961 to take a look at the whole vocational education program in the United States) suggested that behavioral scientists, psychologists, economists, and sociologists be included in any activity the federal government was to undertake in the streamlining and development of a new approach to vocational education in this country. It encouraged noneducators to begin to participate, on the theory that manpower education has to be viewed as a continuous process of development and utilization of a scarce resource. It meant to these people that they needed a continuing information gathering and dissemination process and also an exchange within and between educationists and the manpower people.

There are groups working in the vocational education field that are interested in bringing manpower people into the field. Many administrators welcome manpower people and their participation in educational decision-making activities because they have become so convinced of the need for support.

We are faced with a serious dichotomy in our economy. It is apparent that skilled manpower or manpower waiting to acquire skills necessary to the growth of both local and regional economies and the volume of manpower presently existing for these kinds of jobs are in sharp contrast. We simply need more skilled individuals. As an example our professional schools and technical programs are not developing the number of people needed to function in the fields of health, education, and welfare. Some of the solutions lie in the manpower training and retraining and programs that are currently under way and are being justifiably expanded. There is also a real need for educational programs to develop people to go directly into the world of work. When we speak of the "world of work," we mean as it exists today and is likely to exist in the future. It does not just mean finding new kinds of things for home economists to do for example, moving more home economists into the profit-making sphere as food service people, as health aids, as advisors to individuals in hospitals and homes. It does not just mean finding new ways and new outlets for agricultural education products, and I mean products in the human sense. It does not really mean the development of new types of agricultural occupations, it does not mean just redeveloping business and distributive programs to be slightly more meaningful in the world of work. It means looking on a wholesale basis for new kinds of jobs for new and emerging kinds of occupations, and developing the educational curricula that go along with securing, holding, and prospering in the jobs of the future.

The Department of Labor has been helping us tremendously, and it is our function together to study the manpower scene in this country and to find out where the shifts are occurring, what new things are emerging, what the possibilities are in the future. Of course they cannot be expected to look at the educational curricula or the implications that new programs have for our schools or the possibilities for developing new curricula to meet new needs. However, we can cooperate in the searching, the recommending, and the criticism of the direction of manpower supply. The educators over the years have not approached the curriculum development activity in a way which was responsive to the needs for the living development of vocational curriculum in this country. In many cases they just do not have the kind of information that is needed to do the job.

The way in which you may add to the curriculum development process is the way in which an economist or sociologist might look at occupations--by looking at the life style of the job. How do you prepare a person to move into a job which has as component tasks getting along with fellow workers, taking orders, showing up for work at 8 a.m. five or six days a week, being "regular" on the job, producing quality work, securing a core of skills which makes the worker very much in demand today and for the future? The Department of Labor cannot go into all these things--the responsibility lies with the education people. They have the responsibility for bringing manpower people into education--people who know what the behavioral problems are, who know what is happening in the world, who are concerned with the supply of manpower, and who are concerned with young people. New talents are needed to work with curriculum out of the trail-and-error committee type of development into an analytical approach which comes as close to being a scientific method as possible. Equipping the youngster of today with a core of skills which will make him flexible in the emerging world of work is a task for all concerned disciplines. It should make him adaptable in a world where some forecasters predict three or four job changes in a lifetime. Education has a great role to play in the development of manpower for our new and emerging occupations. We have also a great role to play in bridging the gap between terminal education and the world of work by strengthening the guidance and occupational information programs in high schools. Employers need to be brought in to advise youngsters as to needed skills, opportunities, and preparation for jobs. In high schools, technical schools, vocational schools, and community colleges we have nearly enough support for this kind of activity. The non-college-bound youngster seems to be bypassed when the guidance counselor is processing college applications. There does not seem to be any kind of role for a guidance counselor who is providing the youngster with the needed equipment to go out into this new world that is so very different from the kind world we have been used to over the years. A generation or two ago it was a different story. Youngsters were not as divorced from what one industrial psychologist calls the sight, smells, and sounds of work. The youngster saw to a great extent what his father worked at when cities were smaller and division of labor not as complicated as today. He saw the technical types of things and he saw the sights and smelled the smells and heard the sounds of the world of work. He knew what was going on; he was able to get a good deal of information about what people did for a living and what the life style of certain jobs were.

Recently in Massachusetts a program was adopted whereby counselors may take a college freshman who has designated medicine as a choice of profession and place him in a physician's home for a period of two to three weeks. The student goes on calls with him and to the office. At the end of those weeks very many youngsters say, "This is not what I ever anticipated a doctor would do. It's something I wouldn't want to get involved in at all."

So in effect he has taken an option out of medicine, at very little expense to himself or society. We might not be able to do this with every youngster, and it might not even be desirable to do this with every youngster, but the kind of things we have been thinking about is bringing occupational education and occupational information into the high school so that the youngster can get a better idea of what kinds of jobs are available and what these jobs really mean in terms of skills, techniques, and life style.

The Occupational Outlook Handbook, published by the Department of Labor every two years since 1952, has brought some of this understanding to the youngsters. However, the handbook reflects the economist's view of a particular job--the pay, the training, the demand, the kind of growth to be anticipated in the field. There is really nothing in it about what the person does on the job, what kinds of things he will have to know, how susceptible he is to being laid off, and how he has to continually bring his skills up to date to move forward in the occupational area.

There is real need for the educational community to play a larger role in the manpower development program. Educators need the assistance of the behavioral science researchers to begin to play this role. Collaborations between these two groups is not only advisable but really necessary. We need a better relationship between the vocational educators, the employment service, and the rest of the community. The kind of information often put out by employment service people does not relate to the vocational educators' needs. The printouts the employment service gets from its computers often do not focus on the problems of a particular geographic area or a particular kind of student who is the concern of the vocational educator. Here the universities enter the picture acting as change agents. There are all kinds of possibilities for conducting research activities in this area. How does one bring about and exhort educational institutions to think about changing their environment and their curriculum and their approach to the education of the non-college-bound youth? This is a very difficult and very sensitive process. This research and experimentation must be conducted soon to use the vital information that the employment service has, to bring the employment service into contact with the community needs and to bring the community needs and the employment service into contact with the vocational educators.

Now that we have placed the burden on the vocational educator to change his ways of doing things and to move forward toward greater cooperation with the employment service and others, we must be concerned with the quid pro quo.

What is the vocational educator going to get out of this? What is the community leader going to get out of a new program? What is the employment service going to get out of introducing innovations? How do we begin talking about these various problems once they are identified, and how do we begin reaching some alternative solutions?

We have a tremendous need for cost-benefit analysis of educational progress in this country and a general evaluation of the educational system on a dollars-and-cents basis. The Division of Adult and Vocational Research has been interested in working toward the development of cost effectiveness measurements in education. We have felt the need to attach a cost to the training of individuals in certain educational environments. The Manpower Development Training and the Job Corps programs set out as one of their first priorities a method for evaluating their programs in a quantitative way. Education as another prime user of tax funds certainly has a responsibility to find out whether vocational education is really doing a job or if general education is doing the job more effectively at less cost. This kind of educational cost-benefit analysis as well as other methods for evaluation of education programs on an economic and systematic basis must be entered into soon. Out of developing methodology we hope that alternative solutions and techniques for learning will be developed.

There is a continuing need to develop new approaches to instruction, and even this area is not left solely to the educators. For instance, the philosophy of instruction in organic curriculum brings students along a certain path at their own speed, developing educational competence which would fit them with broader skills and knowledge they may not have acquired by other means. This curriculum would be primarily nonstructured in skill development so that the youngster would not be specifically trained and overtrained in one particular area of vocational learning to the exclusion of the academic concepts. The organic curriculum currently being worked on in the Office of Education is similar to what has become known as the Richmond (Calif.) Plan, where they are trying to teach youngsters who are not as sensitive to abstract academic learning as they might be to learn through industrial education. For instance, the use of a lathe to shape a piece of wood or a piece of brass can also teach the youngster about the properties of the material as well as the functions of the tool. In addition, he learns language usage and writing skills via the reports he writes to his shop teacher which are assigned and corrected by an English teacher. These skills permit the student to function as a whole being; in the context of vocational learning he has added to his skills and self-confidence. This system has been developed not by educators along but by social psychologists, industrial psychologists, and other people interested in a broad range of manpower problems. The philosophy of an organic curriculum coming out of this new communication technique for the disadvantaged must be developed. There must be ways of developing this vast reservoir of manpower resources that we have been wasting over the years.

We have learned that the preponderance of successful learners come from middle-class families. We have not really gone into the art of educating the disadvantaged, the group which has most of the problems with today's education. We need to improve their abilities to deal with the environment of education and jobs.

Two very interesting areas here are the development of new careers and the current program of model cities, both of which emphasize developing disadvantaged people to work within the model city area in urban environment to deal with some of the problems currently being faced in the cities of this nation. This requires involvement of institutions of higher learning because that is where the development of techniques of job analysis are lodged.

Few people are cognizant of the full value of job analysis or can exercise its techniques. Through functional job analysis we can begin to look at some of the professional tasks which have been held sacrosanct over the years. The demands to fill these technical and professional positions probably will never be met. The shortages are chronic if we continue to use the traditional methods of readying people for jobs that have not been analyzed and by curricula that have not been changed. The same concepts that have been used for half of a century are not going to alleviate our pressing needs for doctors, scientists, or public administrators. Changes in productivity will be needed to cope with changes and demands arising from such factors as relative increase in the number of aged, gains in education and income, and medicare. A recent article in the New York Times reports that the shortage of nurses in this country is growing rapidly and that there are at least 125,000 unfilled positions for nurses as well as 30,000 openings for licensed practical nurses. In the future the shortage of registered nurses could reach 344,000 or 1/3 of the total number of nurses in the country. Nursing homes are faring worse than hospitals. We are not likely to meet the shortages in professional and semiprofessional services by the traditional methods we have been following. The problem is to convince practitioners that there are chronic shortages in various professions and occupations and that they must begin to consider increasing their productivity. They have to find alternative ways of training people to become high-level professionals as well as developing other people to take over many of the routine functions. They also have to look at the concept of delivering these services and of developing educational curricula and job ladders to go with these new stepping-stone positions. We must accelerate our efforts for the innovative, exploratory, and exemplary programs.

There are breakthroughs in the field of education itself where they are beginning to develop teacher aides scientifically. The efforts are quite small and certainly not planned, and we will not alleviate shortages merely by developing teacher aides who will remain teacher aides. There must be a technique developed for moving these comparatively unskilled assistants (many of whom have the talent but have never had the opportunity) up the job ladder to a full and certified (if need be) position. Developing alternative techniques of acquiring credentials is no easy matter. The process will be slow, but a program must be started to convince teachers, educators, and leaders of educational unions and associations that major redefinition of jobs is the only way they can meet their increasing responsibilities to provide adequate services to a growing and more demanding public. Some of the theorists in the field of job redefinition have developed what is called "plantation models," whereby you get people into a program at a very low level, call them aides and assistants and keep them there; but there is no new vehicle to get them out of that aide category into a higher level job. There has been no career ladder development for entry level jobs. One such problem is in training a woman or young girl to be a nurses aide and then preventing her from becoming anything further, because in order to become a licensed practical nurse she has to go through the entire training program without receiving credit for her nurses aide experience. There is no alternative technique. This kind of iterative process continues through all levels of nursing, and it is very difficult if not impossible for women who must keep on working as partial or full support of a family to go back to school and start all over again. As one goes higher in the ranks, it is of course more painful to begin again. The opportunity costs are just too high. If a registered nurse with a two-year Associate of Arts degree were to entertain the idea of getting a baccalaureate degree and becoming a supervisory nurse or a teacher of nurses, she would have to go back to her freshman year of college, and start all over again and take the baccalaureate route to become a registered nurse to carry it to the final stage. The three-year nurse would also be given very few credits if any, and she would have to go through a great deal of the four-year curriculum to achieve a B.S. This severly limits the number of nurses who are instructors; it severely limits the career ladders for nurses; it severely limits any desire to move upward in that profession. The doors are shut to future advancement except at tremendous personal sacrifice. Nursing is not the only field in which we have these problems of accreditation and rigidities. Teacher aides are locked in because they need a certain amount of college credit to advance, and in most cases there is no possible way for them to get those credits. We are not rewarding experience in our society. Attempts to measure experience acquired on the job and in the school work program are vital to the continued adequate supply of accredited teachers, nurses and others. We need to develop models on this subject, to develop experimental programs and demonstration projects with the help of state boards of nursing, local medical societies, state boards of education, and other appropriate groups, so that we can move people upward in the professional hierarchy. There is no way for a nurse to become a doctor, except of course through traditional channels. She may have some very valuable experience, but there is no way of evaluating her experience, her previous learning, and her abilities. This blockage problem presents a severe resource waste and a loss of manpower and time. It is something that should be researched and experimented with in social welfare, health, education, and other areas.

There is an opinion that manpower needs in state and local governments are likely to grow by 75 percent over the next eight or nine years. We have yet to develop any formal avenues for youngsters getting out of high schools or community colleges or junior colleges and moving into municipal careers. Internship programs with realistic growth opportunities should be created to move youngsters into jobs in the growing municipal, state, and federal governments. The federal government is not without fault in the job development and career ladder area. Even when we bring people in at a very low level and break down all barriers to employment, there is no avenue for a person to escape from the lowest level jobs into higher paying and more responsible activities.

This is a very rough outline of what some people have begun to call the "new careers concept," and this may be a heady title for a very simple activity. Nevertheless, the concept gives us an opportunity to examine new ways of educating people, of preparing them for the world of work, and of giving them the opportunity to move up in career fields. The fact is that a nurse is so specialized that her training really limits her from moving upward into the medical profession or moving sideways into occupational therapy or social work in a hospital. We must recognize that peak loads today in almost any city in the United States have completely overwhelmed the number of workers with master's degrees in the social work area. There is an urgent need to develop workers at the case aide level and at a level where they can function as a substantial part of a social work team. These are manpower problems and not necessarily poverty problems throughout the system and it is a question of productivity and utilization of a scarce human resource. There is a real need to explore the development of a career ladder in emerging occupations and this is not proceeding quickly enough to satisfy the current needs in the country. One of the goals of education should be that every person terminating the public school system has a saleable skill, and the educational program should be generally responsive to shifting job requirements of the economy. We must increase the awareness of employers and employment services to the placement potential of such trained individuals, exchange ideas on modifying job specifications to fill vacancies with experienced persons, and accelerating upgrading. The problem of getting people into new careers is overshadowed only by the demand for technically competent individuals who can function in entering jobs and succeed in a career.

Basically there is a need for economists and those in the behavioral fields to examine the shifting jobs structure in this country and to advise vocational educators as to the occupations and the needs over the next several years. How can they meet these needs? What kinds of curricula have to be evolved? This will get us down to the point of introducing the manpower research person into the field of education.

We need a combination of people from various disciplines who are interested in the improvement of educational techniques to work on current problems. In the Division of Adult and Vocational Research we are trying to bring about a blend of resources to meet the needs of vocational education. It is not easy to convince people who have worked successfully in their own fields for years that now there is a need to participate fully with "outsiders," but the problems are too serious for petty jealousies, suspicions, and the perpetuation of guarded enclaves.

A decision to support research and development on the scale necessary to bring about major improvements in the process of instruction portends important consequences not only for vocational education but for all education. To make this research worthwhile it must be reflective of the best thinking in the country. This qualification places an emphasis of securing talent from all disciplines to participate in new programs and curriculum development. Not only does education need good researchers but it needs managers of this research to insure early implementation.

The hopeful signs that education is here to stay, and that manpower is here to stay in the educational sphere, is that we have introduced a suggestion that the Vocational Education Act of 1963 call for new career amendment in order to give us funds to study new careers, to give us funds to begin to identify the curriculum ladders, and to legitimize the whole concept of new careers in the education process. As education becomes more responsive to these new career needs we are going to be able to improve our efficiency in relation to additive training programs. A good vocational educational system can insure that youngsters or adults who have to return for training will be able to succeed more rapidly and more satisfactorily. The Youth Corps, the Job Corps, the intensified programs of the Kennedy Amendment, and of course the Scheuer Amendment to the Economic Opportunity Act are properly mentioned as very important programs. As vocational education becomes more realistic and responsive to the needs of youth, perhaps we can cut back on some of the tax dollars being spent for these necessary remedial programs and begin to focus a little more on bringing education into relation with the community so that local people will assume some of these responsibilities. The Bureau of Work Programs is becoming interested in career ladders, and we hope that we have had some influence on them in this kind of role and that other organizations will see fit to devote 10 percent of their operational funds for research that we have legislated under the Vocational Education Act of 1963 (Section 4-C). Congress has called for 10 percent of these operational funds to be used in research and experimental programs. The possible payoffs from well-managed, well-constructed research that is properly implemented and supported are tremendous. We think that research develops thinkers in the field and that in the long run we have saved a great many dollars by the injection of some small percentage of money into a continuing research experimental and developmental program.

Chapter 4

Manpower Programs in the Hard-Core Ghetto

Walter Williams

The serious employment problems in our major cities have centered in hard-core ghetto areas. The November 1966 Department of Labor survey of several large city slums revealed an unemployment rate in these areas three times the national average. The writers analyzing the survey findings concluded that the "city slums have not been reached significantly by the national gains in income and employment" (8, p.73). In response to these facts, the President said in his Manpower Report:

> To the extent that the remaining unemployment is concentrated in these areas, our programs also must be concentrated. To scatter our efforts now is to waste it.... /T/he need /for programs is/ too urgent to permit delay. Accordingly, *I asked the Secretary of Labor and the Director of the Office of Economic Opportunity, in cooperation with the heads of other Federal agencies, to begin this special manpower program immediately with all available resources* (8, p. xvi).

The "special manpower program"--the Concentrated Employment Program (CEP)--is now being implemented in several areas. The new program will focus

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Department of Labor, HEW (through MDTA), and OEO resources on several critical geographic areas of unemployment.[1] In major cities the CEP, generally under the overall sponsorship of the Community Action Agency, will utilize Employment Service and CAA personnel and Bureau of Work Program, CAA, and MDTA funds to develop training and job opportunities for ghetto residents. The target areas for CEP city programs are the hardest-core ghettos of roughly 100-150 thousand residents. Thus the new program attempts to concentrate a significant amount of manpower funds in a relatively small, high-problem slum area.

With this thrust, the CEP appears to offer an excellent research opportunity for trying to answer some of the unsolved questions of the ghetto. Research problems of the urban ghetto are probably best approached with the humble recognition of our lack of knowledge. As Anthony Downs recently observed: "In spite of the recent 'explosion' of attention given ghetto and urban problems, we are really extremely ignorant about how ghettos... really work" (4, p.22). In the area of ghetto manpower problems, an even greater gap exists in our research information. Yet the present setting hardly suggests awaiting the results of carefully planned experimentation. What we can aspire to, as the new ghetto programs get under way, is the development of meaningful research projects to fill some of the knowledge deficiencies.

A healthy skepticism concerning what we "know" in the formal research sense of the word should not, however, mask the fact that we do have a fair amount of program experience and field observation by academicians (e.g. Rainwater, Clark, etc.) that indicate the needed direction of new programs. Thus, a sufficient information base does exist for the development of "reasonable" programs in the hard-core ghettos. But we must be clear from a research perspective that the rationale for these new programs rests upon a set of reasonable assumptions derived from a variety of experiential information, not upon empirically tested hypotheses.

The bulk of this talk will be devoted to discussing a series of tentative hypotheses concerning the basic manpower problems of the urban ghetto and the new manpower and manpower-related programs being developed to attack these problems. In terms of presentation I will state and discuss briefly the rationale of two sets of hypotheses. The first concerns fundamental problems of the hard-core ghetto that make the need for new manpower programs so crucial. The second set of statements applies primarily to the specific manpower services needed in the ghetto. In the final section, without trying to develop formal hypotheses I will inquire concerning the possible overall effect of these manpower programs upon the ghetto community.

THE HARD-CORE GHETTO AS A SET OF INHIBITING FACTORS

The following discussion focuses upon central city areas that are at the bottom of the economic heap. In the 1965 survey of Cleveland, for example, a contiguous area (including Hough) of 134,000 people, with unemployment and poverty rates two to three times higher than the city averages and barely half the city of Cleveland's median income per family ($3,800 vs. $6,900), was at a perceptibly lower economic level than the rest of the city. Every major city has such areas. What are the deleterious effects of Hough or Watts or Roxbury upon its inhabitants?

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[1] CEP is to be implemented in both high unemployment rural areas and urban ghettos, but our concern will be with only the latter.

Statement 1: Within the hard-core ghetto area a set of interrelated structural factors materially limit, relative to the remainder of the metropolitan area, a resident's probability of acquiring the criteria and behavior patterns required for adequate economic performance as defined by the dominant social structure.

The hard-core ghetto--while lacking the precise boundaries and formal restrictiveness of its European namesake--may be viewed, nevertheless, as an ongoing structure in which a set of factors (e.g., poverty, broken homes, poorly educated parents, violence and illicit activity, inadequate medical services, and police arrest procedures) *independent of the individual* reduce a resident's life chances. The fact that these adverse factors are massed in the ghetto takes on great significance. The person is not randomly exposed to the various cues emanating in a city or metropolitan area but is differentially affected by those in near proximity. The structural factors are likely to interact in such a way as to present a more formidable barrier to the person than their individual sum. On the one hand, the tools of market success are more difficult to acquire in the ghetto, and on the other hand, the oppressiveness of the ghetto makes the effort still more difficult. In short, the gestalt of the Crisis Ghetto seems to be one of defeat.

The effect of a concerted dose of the hostile, unrewarding Crisis Ghetto environment seems to mark the child very early in life. The recently published report, *Equality of Educational Opportunity*, finds that children from disadvantaged groups are far more likely than white children to believe that they have little control over their environment. The report states:

> One may speculate that these conceptions reasonably derive from the different experiences that these children have had.... A child from a disadvantaged family has had few of his needs satisfied, has lived in an unresponsive environment, both within the family (where other demands pressed upon his mother) and outside the family, in an outside and often unfriendly world. Thus he cannot *assume* that the environment will respond to his actions.... [F]or many disadvantaged children, a major obstacle to achievement may arise from the very way they confront the environment. Having experienced an unresponsive environment, the virtues of hard work, of diligent and extended effort toward achievement appear to such a child unlikely to be rewarding (2, p.321).

The hypothesis set out in this section stresses the primacy of environmental factors as opposed to cultural factors (i.e. those learned through generations) in determining the behavior patterns of large city ghetto residents. As Yancey has noted in discussing urban ghetto behavior:

> /B /ehavior that is commonly associated with the culture of poverty is primarily derived from the situational factors in the lower class environment..../B /ehavior associated with the "culture of poverty".../is / different from behavior exhibited in the middle or other classes due to differences in environmental conditions. Many of these patterns of behavior--such as illegitimacy, matrifocal families, and low aspirations or lethargy--although they are often seen as social problems by the middle class eye, can also be seen as the lower classes' answer to the immediate problems presented to it by the environment of poverty. (13, pp. 19-20).

As Yancey also pointed out, a limited amount of observed behavior does appear to be derived from a separate culture of poverty (passed from generation to generation). Further, it is true that ghetto residents may internalize values in their hostile environment that hinder them in the job market. Our point is simply that most "bad" behavior in the urban ghetto is a response to that area's "bad" environment rather than the consequence of the intergenerational norms of a separate (poverty) culture.

Since our emphasis will be on work, consideration should be given to the particular deficiencies for job success flowing from the structure of the ghetto. First, the ghetto person is likely to lack the accoutrements of adequate economic performance. In part the ghetto resident's deficiencies will be real, flowing from poor written, verbal, and/or calculating skills. That is, in an objective sense, skill and/or knowledge deficits will eliminate the ghetto person from some jobs. But other deficiencies--lack of a high school diploma, an arrest record, or a low score on a culturally biased aptitude test--that bar the ghetto person from employment may have little relationship to actual job performance. As Doeringer and Piore observed after studying the blue-collar occupation hiring practices of twenty medium-to-large manufacturing firms:

> Firms imposed educational qualifications for employment because they believed that these qualifications would select a group of candidates who would perform well on the job. They knew surprisingly little, however, about the relationships between the formal educational curriculum and job performance. At best, the hiring standards were derived from crude and unusually intuitive or "horseback" correlations between educational attainment and performance (3).

Second, the ghetto resident will often lack knowledge of the behavior patterns required for successful job performance. From the Greeks to Goffman, people have chronicled the importance of proper role playing. The discussion in the following sections will raise some question as to whether the ghetto inhabitant is completely ignorant of the appropriate behavior or simply does not play the role because it has not helped him very much. Despite this qualification, two points about the lack of knowledge are germane: (1) It seems clear that many teen-agers are deficient in their knowledge of the regimen of the industrial process and these deficiencies may start them down the road to the dead-end, low-paying job before they pick up the rules of the game. (2) While the ghetto resident may know the rudiments of the game (e.g., punctuality), it seems unlikely that he is knowledgeable of the nuances of organizational manipulation that now have such an important place in job success.

In sum, I hold that a person facing a set of structural factors biased toward failure will have a higher probability of failure than an individual in a setting loaded with success factors. This is not to say that all will fail or that no great successes will be found. It is a probability statement that the average fellow has his life (job) chances thwarted in the hard-core ghetto relative to the rest of society.

Statement 2. The male's failure in the job market (e.g., not having decent-paying and stable employment) is at the root of the problems in the ghetto and is a significant factor contributing to family breakup in the hard-core ghetto.

Three of the most perceptive students of lower-class behavior have argued for the importance of good jobs for the hard-core ghetto:

> The roots of the pathology of ghetto communities lie in menial, low-income jobs held by most ghetto residents. If the occupational level of the community could be raised, one would expect a corresponding decrease in social pathology, in dependency, disease, and crime (1, p.34).

> The history of the Negro family since the time of slavery suggests that the most important single program is the elimination of unemployment. If Negro men can obtain decent and stable jobs, then many--and far more than we think--can *at once assume a viable role in the family*, and can raise children who will put an end to the long tradition of male marginality and inferiority (5, p.50, my italics).

> However, continued success in holding a job, or, even more, in doing well enough to merit an increased wage has the effect of increasing the individual's subjective probability estimate of achieving a valid identity in terms of the possibilities inherent in the occupational role. Possibly very few lower-class individuals direct their aspiration toward career success, but the goals involved in the concept of "the good American life" are ones which they have internalized long ago and which appear increasingly feasible as the job seems more stable or income increases (9, p.121).

The effect of unemployment or marginal employment (day work or frequent job changing) needs to be interpreted in terms of its social meaning. As Yancey has observed:

> More than this, it appears from the analysis of these men and their families that it is not unemployment *per se* that results in disrupted families. Rather, it is the interaction between the employment status of the man and the

> societal prescriptions that demand that he work if he is to be considered worthy of being head of the household. When a man becomes unemployed, if he does not have a legitimate reason for doing so, he is labeled a "worthless bum" and it is this labeling process that results in the secondard deviance that is so frequently associated with unemployment. From the point of view of many lower class men the problem of employment does not stem from the high unemployment rate or the lack of jobs, but rather from the societal norm which requires that a man work if he is to be considered a male. It is clearly the latter, as much as the former, that contributes to the pathologies that we associate with unemployment (12, p.184).

Unemployment and marginal employment place a man in double jeopardy--they threaten him financially and as a stigma upon his manhood. As Yancey suggests, if the man can overcome the latter by a socially acceptable rationalization--disability, a job layoff, or other factors beyond the person's control--and obtain another source of income (unemployment compensation, welfare, etc.), he may remain "legitimately" as head of his family. However, given the payment levels of these alternative means of support and the likelihood that they will be cut off, the financial specter remains.

Statement 3. In general, the ghetto resident accepts societal goals. Specifically, the male will in general adhere to the goal of a stable family life and the principle that work is the legitimate path to this goal.

Statement 4. "Non-conformity with cultural norms can be seen, then, as an organized effort on the part of persons to achieve a sense of valid identity in a situation in which they have not been able to achieve it within the confines of their norms" (9, p.108).

Individual damage caused by the deleterious effects of the ghetto ranges along a continuum. Our focus will be on those showing serious liabilities. In essence, the discussion will concern the Weberian ideal type of the ghetto male loser.

The starting circumstances for the eventual ghetto failures are different from those of the "successes," less in terms of goals than of the probabilities for reaching those goals. When a ghetto male's behavior in his failure is observed, the impression may be that he has different goals arising from a nonwork culture. However, the impression seems to come from entering a process at the middle, not the beginning, since "acceptable" societal goals are usually there at the beginning of the man's entry into the job market. As Elliot Liebow has written:

> The young, lower class Negro gets married in his early twenties, at approximately the same time and in part for the same reason as his white or Negro working or middle

> class counterpart. He has no special motive for getting married; sex is there for the taking, with or without marriage, and he can also live with a woman or have children--if he has not done this already--without getting married. He wants to be publicly, legally married, to support a family and be the head of it, because this is what it is to be a man in our society, whether one lives in a room near the Carry-out or in an elegant home in the suburbs (7, p.210).[2]

The ghetto male, with his varying real or perceived liabilities, frequently gets a job that does not pay him enough to support his family and, worse yet, has little prospect of leading to a living wage. The longer he works the longer he fails as a provider. Finally, the work itself is degrading with its onus of a lower caste. Within the framework of a job that does not allow the man to support his family, his marriage has a high probability of deterioration. In a sense, his family being unprovided for is a continuous symbol of the man's inability to fulfill the demands of his society. He begins to opt out.

The retreat from the larger society has begun. The most important point to observe is that it is a retreat, after flunking the test of a good provider. For those who enter this street-corner world, a new behavior style develops with these dimensions. In the nonwork aspect of his life, the street-corner man engages in intense (usually very short-lived) personal involvements in which the self, independent of the work place, is the center of the relationship. As Rainwater points out, the expressive style (a more general term for street-corner behavior) involves the differentiation of self in order to trade on personal characteristics.

Especially important, in the work area the new style involves absenteeism, laziness, frequent job changing--in sum, a concentrated effort not to try and thus commit one's self to a job that again threatens the person. The street-corner man avoids direct confrontation of failure involved in openly trying to succeed in the job role. In short, the person establishes a mode of existence in which he is able to live with himself amid the hostile structural setting. Unfortunately, the behavior pattern exhibited lowers even more the likelihood of the street-corner man getting a good job.

Since it is a key point, I should be more explicit about the claim that hard-core ghetto (lower-class) persons adhere to the principle that work is the legitimate path to providing a stable family life. I do not believe the lower-class person necessarily looks on work as a calling, or has the middle-class gestalt which makes career a part of one's being. This may be true in part because the lower-class person's view of work has been eroded by a series of menial jobs, while we of the middle class have experienced positive reinforcement. Hence it is likely that the lower-class person is not enthusiastic about any job (just to be working). Given enough income and status to lead a stable family life, it could well be that the lower-class person would choose leisure over work, not as a rationalization of failure but as a true expression of his values. However, income and status are not forthcoming without work. Since the lower-class person desires both as a means to a stable family life, he is willing to work as a legitimate means to his goals. But the job must fulfill that function--it must be a decent, stable job that offers the necessary income and status for a normal family life.

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[2] This section relies heavily on Elliot Liebow's Tally's Corner. Liebow spent a year observing a group of lower-class Negro men--all job market losers, all separated or in the process of being separated from their legal families--in their street-corner society centered around the Carry-out restaurant, a small restaurant not far from the Capital area in Washington.

The analysis of the more disadvantaged hard-core ghetto male to this point has focused on the individual, but it is also instructive to consider his group relationships. Many hard-core ghetto residents suffer similar unfavorable employment experiences that lead them toward the street corner. Here they find a smaller society that can meet their needs for friendship (male and female) and respect weighed in a different currency than work success. Thus the street-corner society produces a set of emoluments that binds the man to it and from which he is to be lured away only with the fairly good prospect of something better.

It would be a serious misreading of the facts to romanticize the expressive style and the street-corner society as happy alternatives to the main societal goals. On the other hand, the street-corner society does have an ongoing value as a means through which the individual can have a viable identity in his limited environment. Once he has found an equilibrium point, the street-corner man may be loathe to leave that society unless he is fairly certain he will find a better identity. There is nothing in his behavior that seems terribly unreasonable. One wonders how many better situated people languish in jobs beneath their capabilities because of the safety of a proven situation.

In this section I have focused upon the adult male's dysfunctional behavior because such behavior has been discussed previously mainly in terms of the teen-ager. Certainly Liebow's work can be viewed as an extension to the adult group of Rainwater and others' discussion of the expressive style based on observations of teen-agers. Hence our discussion concerning work habits, goals, and "ties to the street" are relevant to teen-agers. In that vein two comments are pertinent. First, it is my impression that the incidence of the expressive style occurs much more among teen-agers than adults. Second, ties to the street may be much stronger for teen-agers and young adults (under 25) than for other males. For the younger males who may have few financial responsibilities, the pleasures of the street may be hard to overcome in the short term except by a very good job offer. Yet as John Horton observed in his recent study of street youth: "The regular in the street set...dreams about the day when he will get himself together and move ahead to the rewards of a good job, money, and family" (6, p.11).

MANPOWER PROGRAMS FOR THE HARD-CORE GHETTO

From the discussion in the previous section one may derive two basic hypotheses:

Statement 5. Good jobs will reverse the process of decline for males and help establish or reestablish a stable family environment.

Statement 6. Within a reasonable period of time, large-scale well-organized manpower programs that utilize a limited level of supportive services[3] and have community, business, and labor union cooperation can help many ghetto residents to adjust successfully to the work regimen required for holding a reasonably well-paying, stable job.

These two statements point to the dual aspect of the manpower problem in the ghetto. On the one hand, decent jobs must be available to ghetto residents which require both a high-level growth economy and also specific employer cooperation. But the availability of jobs alone is not enough. Even if good jobs were made available, many ghetto residents have a variety of problems--lack of skills, dysfunctional attitudes, low expectations of success--that lower the likelihood of job success. So manpower programs must bridge these gaps. In short, we face problems of the state of the demand for and supply of labor as it affects the ghetto, and the specifics of designing programs to ameliorate these problems.

Demand Considerations

Statement 7. Aggregate demand alone will not end poverty, but a high-level growth economy accompanied by a tight labor market is the only setting in which more specific anti-poverty measures will work.

As James Tobin has written in Daedelus: "The most important dimension of the overall economic climate is the tightness of the labor market" (10, p.880). In a loose labor market it is unlikely that the disadvantaged will be able to get good jobs, nor will manpower training programs for the disadvantaged be effective.

Statement 8. Over a wide range of blue-collar occupations, the entry level of skill can be acquired by hard-core ghetto residents with only a brief period of on-the-job training.

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[3] The term "manpower programs" is used very broadly to include supportive services aimed directly at impediments to employment. A whole battery of services could be used under the rubric, including health care, day care, family services, remedial education. The requirement is that the service increase the employability of the person.

Statement 9. The set of criteria which bar ghetto residents from these blue-collar entry level jobs are frequently amorphous and, even when clearly specified (i.e., a high school diploma) are not based upon empirical evidence relating the criteria to job performance.

The Doeringer and Piore study showed that most of the training for blue-collar positions was in an informal on-the-job setting that merged into the production process. That is, the new worker learned by doing, with an experienced person available to give helpful hints. In the main, it was a matter of the new worker becoming conditioned physically to control his part of the production process. Competence frequently requires physical dexterity and some coordination but certainly no special training or skill that a ghetto resident could not acquire with the very informal on-the-job procedure the companies now use.[4]

Yet many companies effectively bar the ghetto resident from these desirable blue-collar jobs. Frequently the barrier operates through a set of screening standards (education, test scores, etc.) that the employer feels have yielded him a satisfactory work force but that have not been validated empirically. At other times the reason for rejecting the ghetto person seems to be an amorphous fear either that the ghetto person will be undependable or will cause trouble with the work force. This reasoning may also underlie the formal screening procedures. On the one hand, we may inquire as to how often these fears are based on prejudice that keeps the employer from hiring any minority groups or that causes him to remember selectively the troublemaking Negro but not his white counterpart. On the other hand, if our characterization of the behavior patterns of the expressive life style are a reasonable description of reality, then the employer may have experiences that led to legitimate fears concerning the performance (not the skill component but other aspects of the employee's activity, e.g., absenteeism) of the ghetto residents.

Statement 10. "The most important external factor in shifts from the expressive life style to a more stable life style is probably the willingness of employers to put up with behavior that they feel interferes with job performance" (9, p.122).

Statement 11. Without employer and labor union cooperation involving some realistic concessions to the deficiencies of the disadvantaged, manpower programs have a very low probability of success.

The previous discussion sets out the thesis that ghetto residents have the skill capabilities needed for many blue-collar jobs but are kept out by empirically unvalidated screening standards, prejudice, the past behavior of some ghetto residents, or some combination of these three. Statements 10 and 11 flow directly from this argument in recognizing that on the demand side employers and labor unions need to reduce some of the formal and informal employment barriers and also realize the need for a flexible attitude during the time it takes the ghetto person to adjust to the demands of the work environment. If the street-corner man exhibits dysfunction behavior in the short run and if the employer fires him, we seem to have a never-ending vicious circle. Employers and labor unions need to recognize the need for special treatment of the disadvantaged ghetto resident during a limited period of time. If the length of time is fairly limited for the ghetto person to reach at least the minimum acceptable levels of output and to act in a manner that does not disrupt the production process, I believe that it is reasonable to expect employers and unions to facilitate this adjustment process.

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[4] Professor Edward Moscovitch of Williams College, from a variety of field visits for OEO, draws the same conclusion as Doeringer and Piore: that entry level skill *per se* is not a major factor stopping the ghetto resident from obtaining a wide range of reasonably well-paying blue-collar jobs.

Supply Considerations

Statement 12. Given reasonable changes in employment practices relative to ghetto persons, large-scale[5] manpower programs with limited levels of supportive services can help significant numbers of ghetto residents (including street-corner men) obtain and hold decent jobs.

In earlier discussion we hypothesized that most ghetto residents accept work as the principal means for achieving a stable family life, but that structural blockages cause many to behave dysfunctionally relative to the stable family-life goal. Statement 12 goes further, hypothesizing that with a lessening of structural blockages (i.e. factors outside the individual) manpower programs with limited supportive services can help ghetto residents hold decent jobs. Alternatively, the statement holds that most ghetto persons have not suffered such psychological damage or formed such a hostile view of the main society that they will respond only to extended clinical treatment administered by highly trained professionals.

Statement 12 is fundamental to the Concentrated Employment Program. CEP personnel will be primarily regular Community Action Agency, Employment Service, and Vocational Education employees (or new people with similar characteristics) with a heavy component of subprofessionals from the CEP target areas. If this level of personnel cannot help most ghetto residents, CEP is obviously doomed to failure. That is, even given employer and labor union cooperation and well-organized manpower programs,[6] the new program still will not reach very many people.

Since this is a crucial point, let me try to put it in somewhat more rigorous terms. Assume two sets of structural factors: X, biased toward adequate work performance (behavior pattern X') and Y, biased toward inadequate work performance (behavior pattern Y'). If individual A is exposed to the Y set of factors, it is likely that he will exhibit behavior pattern Y' even though he adheres to a goal requiring adequate work performance. Now expose A to the X structural set. He may exhibit the X' behavior pattern, thus responding positively to the new set of stimuli (statement 12). However, A may instead continue to exhibit behavior pattern Y', despite the cessation of the prior stimulation conditions (in this case, Y).[7]

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[5] The importance of large-scale programs will be discussed in Statement 19.

[6] This point will be discussed in Statement 15.

I do not pretend to understand, and I am not convinced that anyone else understands, the internal dynamics that render an individual relatively incapable (e.g., over an extended time period) of responding to new structural cues. But it should be clear that if the situation exists in which most ghetto residents are psychologically incapable of positive response to a new structural setting of employment changes and new manpower programs with limited supportive services, CEP will fail.

Statement 13. Since the expressive style provides the street-corner man a viable identity in his limited environment, a time lag will be involved in the process of getting him back into the main stream of society.

Statement 14. The length of time needed for this typical ghetto person to adjust to the demands of a decent job may be reduced but not to zero.

These two statements qualify statement 12 by positing an adjustment process that cannot be reduced to zero. In essence these two statements reject both perserveration and instant adjustment as the predominant expected ghetto behavior patterns of street-corner men in response to the changing stimuli accompanying the CEP. The old haven of the expressive style will not be surrendered in an instant. As Rainwater has observed: "It takes time for the individual to shift his estimate of what represents the best bet for establishing a valid identity for himself" (9, p.122).

The General Design of Manpower Programs

In this section I will discuss in general terms what I believe are the design characteristics required for "relatively successful"[8] ghetto manpower programs. I have used the phrase "relatively successful" because we do not have sufficient program information on hard-core ghetto residents to develop baseline rates for assessing absolute program success. Since we do not have any basis for determining an acceptable success "batting average," program hypotheses will be framed in terms of inequalities (X will produce a higher success rate than Y).

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[7] Such behavior is often termed perserveration by psychologists. The continuing response after the removal of the precipitating stimuli also seems to be described by the older Freudian phrase "functional autonomy."

[8] As a working definition, success may be defined for our purposes as a person obtaining and holding a job over some specified period in the competitive market (i.e., not subsidized by the government) that either (1) pays enough for a man to support his family or (2) in the case of a young, single person offers a good chance of advancement to a job that pays the type of wage described in 1). As some of the ghetto manpower programs, particularly the Scheuer (New Careers) program for subprofessional training, involve wage subsidization over a fairly long period, an interim success measure might be cast in terms of adequate job performance.

In the following hypotheses we need to distinguish clearly between the institutional change specified as needed (the occurrence of which is problematic) and the expected result if such change does in fact result. Statement 15 which follows can be subdivided into two hypotheses to show this distinction:

15a. Manpower and manpower-related program elements in a city can be reoriented toward providing adequate services to disadvantaged ghetto residents and melded into a well-organized administrative unit.

15b. The result of the development of such a unit will be to increase the program success rate.

The CEP then may be viewed first as a strategy for institutional change which strategy may or may not succeed. The establishment of an individual CEP does not necessarily verify change. For example, a CEP may do a poor job of integrating the manpower services in the city. If a CEP does not institute change, it is wrong to say that the specified change did not bring the hypothesized result. What we can claim is that the strategy of change failed. In short, it is necessary in the following hypotheses to separate the question of the effectiveness of the CEP as a strategy for institutional change from the question of the effectiveness of that change in helping disadvantaged ghetto residents.

Statement 15. If the various manpower and manpower-related program elements in a city can be reoriented toward providing adequate services to disadvantaged ghetto residents and melded into a well-organized administrative unit, the program success rate will be increased.

The reports of The President's Committee on Manpower (PCOM) three-man teams (representatives from Labor, OEO, and HEW sent to several large cities to facilitate coordination in the manpower area) show that frequently there was (1) a lack of meaningful coordination among programs of different agencies and (2) a failure by individual programs to reach or adequately serve disadvantaged people, including hard-core ghetto residents. The CEP is an explicit attempt to overcome the deficiencies. It can be viewed as a test of whether or not local programs funded by different federal agencies can work together effectively to concentrate their efforts upon reaching the ghetto's disadvantaged population.[9] If such a reoriented and coordinated program cannot be developed, one can hardly be optimistic about the success of the CEP.[10]

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[9] It should also be mentioned that the CEP needs the support of the city government. While the CEP focuses upon a target ghetto area, the services involved are part of the city power structure. Clearly, if it so chooses, the city can thwart the program or help it get the agency and employer cooperation that is needed.

Statement 16. For disadvantaged ghetto residents, a work training setting involving interpersonal support[11] will have a higher success rate than either an uncoupled OJT or a primarily classroom-oriented program.

Statement 17. Work orientation sessions and/or direct interpersonal support activity provided primarily by subprofessionals during training and/or the initial phases of the job will increase the program success rate.

Statement 18. Significant employer and labor union involvement, including but not restricted to a firm commitment of jobs specifically for ghetto residents and the development of a meaningful system of inplant support for the hirees from the ghetto, will increase the program success rate.

These three statements are linked together by two basic propositions: (1) For ghetto residents a work setting will generally be superior to formal classroom training. (2) In either situation, interpersonal support services will increase the program success rate. The fact that many ghetto residents have been failed by the school system and have long histories of discouragement makes the work setting with its immediate rewards seem superior to a return to the classroom. Beyond this specific argument in terms of ghetto persons, I suspect that the previously discussed evidence showing the primacy of on-the-job training suggests a *prima facie* case for its choice over classroom training.

A year ago many people felt that the regular OJT program if opened up to the disadvantaged would be the appropriate vehicle for solving ghetto employment problems. However, recent scattered evidence of dropout rates far in excess of regular OJT levels for a few work-training programs aimed at the disadvantaged has brought a reassessment of the earlier view. It now seems that programs for the ghetto residents are going to have to provide prevocational training and direct support to the person in training and at the job site during the adjustment process.

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[10] The issue of program reorientation and coordination is so complex as to background, problems involved, and implications for federal, state, and local administrative policy that a very extended discussion, well beyond the time constraints of this talk, would be required to do the topic even partial justice. So let me simply emphasize both the importance of this issue for the CEP and the tremendous research potential for those interested in the areas of administrative theory and community structure.

[11] In the area of interpersonal support, an idea gaining currency is that of a buffer person who would be an employee (probably a subprofessional) of the manpower program and whose function would be to try to minimize conflict between the ghetto person and the employing company. For example, in the Chicago JOBS NOW program (an MDTA E&D project for finding employment for 3,000 disadvantaged youths) this buffer person is assigned to roughly twenty people to facilitate their adjustment to the work situation.

The employer may be the key to an effective support setting. First, the company will be a major factor in determining the effectiveness of noncompany support personnel. After all, whether or not an outsider can act as a buffer between the company and the employee depends in part on the company allowing such a mediation relationship to exist. For example, will the employer call on the support person at the first sign of trouble? Second, the company will determine the extent of its own support including the assignment of company support personnel and the rules for treating "bad" behavior (i.e., to fire or not to fire for a minor incident or being late). In short, the company (and the labor unions) makes most of the rules of the game that will fix the dimensions of an interpersonal support system.

The last paragraph highlights a critical point. If significant numbers of ghetto residents are going to obtain and hold decent jobs, the institutions that control competitive market employment must change. The federal government can facilitate such change, and it may well decide to go beyond the present programs in the CEP to more fully insure the competitive market institutions against losses from hiring the disadvantaged. But the fact remains that employers and labor unions bear the ultimate burden for chance as they are the keepers of the rules that govern competitive market employment.

Statement 19. The success rate of manpower programs in the hard-core ghetto will be increased by concentrating these programs on a small enough area to have visibility for most ghetto residents.

Perceptible change in the ghetto person's behavior may be dependent upon material changes in the set of structural factors forming the basis of his decision-making process.[12] A decent job or a slot in a training program may change only one relevant factor for the ghetto person while all of the other factors, whose sum had previously indicated failure, remain constant. The now overused word "credibility" applies in this instance. Participants must believe that the program is really for them (e.g., perceive that the end of the process will be a decent job). My view is that a visible program participated in by some of the peers of the ghetto person will have a fair probability of making the project credible.

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[12] Conceptually, relevant to each decision is a set of social, psychological, and economic factors upon which the decision-maker bases his assessment of the subjective probabilities of various alternatives. Of course, such a conceptualization is not meant to suggest that people go through a formal game theory process before each decision. It does, however, seem reasonable that the effects of previous bad experience in jobs, etc., do not simply vanish upon the offer of a job.

Many of the present work and training programs are of the one-factor variety in that they draw a single person from an area and place him in a class of strangers. He is isolated from his peers in a classroom setting or in a job, either of which may be threatening. Nothing else may be happening to reinforce the positive effects of the work-training experience. Such a situation places maximum demands upon those responsible for the person's progress in the classroom or job setting. They must affect other relevant factors so as to validate the participant's impression that the project is meaningful for him. Perhaps these difficulties explain the lack of success in reaching really hard-core persons in many of the present work and training programs.

It is likely that a reasonable success rate in work-oriented programs at a fairly low cost per hard-core person requires a sizable, concentrated--in short, a visible--effort in an area. The statement may seem paradoxical in juxtaposition with the fact that there exists a short supply of competent training and support personnel. The point is, however, that a program of visible change may have a snowball effect (i.e., change other factors relevant to the decision-making process) that will make the need for outstanding personnel less critical. Wartime experience seems to be an example of this phenomenon. People who were never productive before were able to perform as they were caught up in a spirit of urgency. A work and training program for the ghetto that involves a significant and visible number of people may have this type of positive effect.

The CEP must offset the pull of the street-corner society by effecting the set of factors that brings the person to believe that he does have a reasonable chance to succeed. That is, in order to reach the street-corner man, the new program must compete with his ongoing social structure that emits a variety of cues that stress failure and hostility in the job market and further offers the safety of the known (hence, predictable) situation. Along one dimension visibility may be expected to modify an amorphous factor--the mood of the ghetto--by making credible the larger society's commitment to change. More tangibly, programs that concentrate on hard-core persons will give evidence to the person that others like himself are there too. In essence visibility may be viewed as the social analogue of the individual support built into the program as both aim at increasing the person's subjective estimate of success. Both must vie with the pull of the old safe haven of the limited street-corner society in which there will no doubt be a response to resist such change.

Program Expectations

We started the ghetto discussion from the premise that a set of interrelated structural factors materially limit the probability of adequate economic performance by the hard-core ghetto resident. The CEP, or more elaborately, a competitive market-oriented manpower program with limited supportive services, is best interpreted as a strategy for modifying these deleterious structural factors. Specifically, we posited first that CEP must initiate the following structural modifications and second that these changes will help ghetto residents in the job market:

1. A reorientation of manpower and related programs toward providing adequate services to hard-core ghetto residents, and an integration of these programs into an effective administrative unit.

2. New employment practices in which realistic reductions of hiring standards are made and on-the-job support is provided over a brief period of time.

3. A concentration of large-scale manpower programs emphasizing interpersonal supportive work-training services on a relatively small, hard-core ghetto area.[13]

It is probably fruitless to speculate at any length about the probabilities that institutional change will occur or that this change will help ghetto residents, but a few comments are needed. The previous statement that the establishment of a CEP does not validate institutional change should be emphasized. My own view is one of "very guarded optimism" that significant changes[14] will occur. Given such change, I do believe manpower programs can be much more successful than in the past in helping hard-core ghetto residents get and keep decent jobs. However, as pointed out earlier, we have no good baseline data against which to compare results. I suspect, based on bits and pieces of evidence, that a batting average of .5 may be a really outstanding success rate for hard-core ghetto area programs. This means that even under "good" conditions lots of failures will result. Lastly, both the successes and the failures are likely to affect the whole hard-core ghetto. In the closing section I will speculate briefly on the consequences of manpower programs for the ghetto.

Manpower Programs and the Hard-Core Ghetto Community

Our first two hypotheses stated that the hard-core ghetto inhibits a person's job chances and that the lack of good jobs caused much of the pathology in the ghetto. Thus we now have a vicious circle in which the limited chances bring failure and the failure limits others' (both adults and young people) chances. If this cycle of poverty is to be broken, the hard-core ghetto must provide its residents: (1) socially acceptable means of increasing the income-generating capacity of income units that presently have a high probability of insufficient income flows over time.....

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[13] The CEP will obviously be trying to bring about individual change (i.e., skill increases) but so do most other programs. It is the institutional change thrust that differentiates the new program.

[14] The degree of institutional change to be deemed significant is not something that can be specified *a priori*. The fact that the degree of change in various areas can vary over a wide range presents problems both for program planning and research. Unless those planning programs can assess the extent of change, they will have difficulty in determining whether program deficiencies flow from the fundamental design of the program, the failure to effect sufficient change, or the damage to ghetto residents which was in fact so great that they were unable to respond to this type of program. For a researcher, the variations in degree of change and possible interaction flowing from the mix of different change levels can complicate greatly a research design.

(2) a setting in which the children of the hard-core ghetto families have a reasonable likelihood of acquiring the necessary skills and knowledge of the behavior patterns necessary for earning an adequate future income through socially acceptable means.

Conceptually the CEP will aim directly at breaking the cycle of despair by helping ghetto residents get decent jobs through a competitive market-oriented manpower program (point 1). It also may be that CEP through increases in family income and the opportunity structure indirectly can alter favorably the setting discussed in point two. However, our knowledge of the effect of social intervention and the process of social change is so limited that the indirect consequences of the CEP are certainly problematic. For this reason, it seems incumbent upon us to begin inquiry immediately as to the CEP's overall effect upon the ghetto community. What forces may be set in motion both by CEP's successes (those who get good jobs) and failures (those who drop out), and what repercussions may these changes have on the hard-core residents not reached directly by the CEP?

Any significant increase in the opportunity structure for ghetto residents through manpower programs makes it likely that the net outmigration rate for the hard-core ghetto area will increase, thereby making the area more and more the home of the economically weak. The changes in the previously mentioned Cleveland hard-core ghetto during the economic boom of the 1960-65 period illustrate this point. While the area population declined by 20% over the five-year period, the total number of people in aged and female-headed families remained constant (the latter increased). By 1965, roughly 40% of the 134,000 people in the hard-core ghetto area were in aged and female-headed families, and two-thirds of these families were poor. That is, 25 of every 100 persons in this ghetto area were members of poor aged and female-headed family units--the units with the highest probability of remaining poor. Young people comprised somewhat over half of the latter group. These poor kids numbered 17,000 or 13% of the area's population.

As Cleveland grew more prosperous and many gained the economic capacity to flee the hard-core ghetto area, others seemed to be more ensnarled.[15] And what we record as of 1965 is a bubbling up of these economically weak groups to a very significant place in the total hard-core ghetto population. Particularly depressing was the increase of poor Negro young people from the economically weak female-headed homes--young people whose bondage likely becomes relatively more oppressive as much of the rest of the city grows more prosperous.[16]

The CEP may help many teen-agers and also female heads of families, but surely in the short run large numbers will remain locked in the hard-core ghetto. How will the success in ghetto manpower programs affect the outlook of those whom it does not reach? The problem in assessing this implication of success in manpower programs upon those not yet directly affected is that the same phenomenon is amenable to two diametrically opposite translations: (1) It will also happen to me (or my children)--in essence the American dream of success, or (2) there goes another one but I'M stuck--relative deprivation, the adverse aspect of the success theme.

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[15] Median real income rose by roughly 9% per Cleveland family during the five-year period, while it declined by 15% for female-headed families in the hard-core ghetto.

[16] See (11) for a more extended discussion of these points.

The first of these interpretations hardly seems likely for those who drop out of the program. What is the effect on their families? How do we prevent their children from falling into the same predicament as the parents?

Competitive market-oriented manpower programs may (1) stabilize or reestablish some families and (2) give unmarried males the chance to gain economic strength sufficient to support a family. Thus, the program may be the best means of preventing the cycle of family breakup for many ghetto families. But even if we agree that a competitive market-oriented manpower program is necessary and the first-order condition of attacking ghetto ills, it is not clear that the program alone is a sufficient condition. What, if anything, beyond these manpower programs is needed?

My initial guess is that other programs will be required. While I will speculate briefly about other programs, I should again stress our lack of knowledge and the need for research in this area.

It may be that we need a better system of income maintenance, especially for female-headed families, so that they will not be degraded in the process of receiving income (as they frequently are now under Public Assistance). Also, if we believe that work serves a useful function beyond "physical output" in providing an individual a satisfying image both to himself and to his family and a meaningful attachment to his society, we may decide that some type of sheltered (noncompetitive) employment is needed. Yet it is not clear that the necessary set of income-generating programs (both manpower and transfer) alone will be enough. What must be done with ghetto schools so that they will provide children a decent education? Must we have public programs to provide decent housing and other facilities? Can the mood of the ghetto be changed without great public expenditure on physical capital?

We must think in terms of the total effort needed to fight poverty in the ghetto community even though we begin with only a concerted manpower effort at this time. If we do not, the positive aspects of the new program could be offset by deleterious side effects on those we do not reach or fail. Those unreached or failed by the new program may sink into greater despair. The greatest hurt of all may be seeing others advancing more rapidly than oneself. The feeling of relative deprivation may have dire consequences. This possibility certainly must be investigated.

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Chapter 5

Health Manpower Research Program

George Inada

The Bureau of Health Manpower in the U.S. Public Health Service is "charged with stimulating the development of health manpower resources throughout the nation to the end that needed health services are available to all of the American people." In order to enable the Bureau to accomplish this task as rapidly as possible, Congress has provided legislative tools permitting:

1. Construction grants to colleges and universities to create more and better teaching facilities.
2. Grants to upgrade curricula.
3. Grants for research in manpower utilization.
4. Grants for long- and short-term training or retraining of health personnel.
5. Scholarships and loans to students to enable them to undertake health service careers. (My usage of scholarships covers only specific areas.)

The need for the Bureau's functions has developed swiftly from a complex of explosive social phenomena including: (1) the expanding and shifting population containing proportionally more old people and more young people, (2) a flood of new health knowledge with techniques for its application to health problems, (3) changing attitudes toward health from both consumer of health services and the provider, and (4) a growing feeling of public-private partnership in the research planning and delivery of health services.

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FEDERAL LEGISLATION

There are several federal laws affecting the supply and demand of health manpower. I will concentrate my major time in relation to the Allied Health Personnel Training Act of 1966, P.L. 89-751. This legislation was passed to amend the PH Service Act to increase the opportunities for training of medical technologists and personnel in other allied health professions, to improve the educational quality of the schools training such allied health professions personnel, and to strengthen and improve the existing student loan programs for medical, osteopathic, dental, podiatry, pharmacy, optometric and nursing students. The act authorizes a three-year program for fiscal years 1967 through 1969 and includes several specific types of grants.

Basic Improvement Grants

The purpose of these grants is to give assistance to colleges, universities, and junior colleges for building teaching facilities and enriching teaching and training programs in allied health professions. They may also be used to set up a "training center for allied health professions"--in a public or other non-profit junior college, college, or university--to provide programs of education in allied health occupations leading to an associate, baccalaureate, or higher degree for no fewer than 20 students.

These grants may be used to improve educational programs which qualify students for the baccalaureate degree of the above to the extent required to prepare graduates for basic professional certification, registration, or licensure in one of the following occupations:

1. Medical technologist
2. Optometric technologist
3. Dental hygienist
4. Radiologic technologist
5. Medical records librarian
6. Dietitian
7. Occupational therapist
8. Physical therapist

These grants may also be used to improve educational programs in junior colleges, colleges, and universities which qualify students for associate degree or its equivalent and for employment in one of the following occupations:

1. X-ray technician
2. Medical records technician
3. Inhalation therapy technician
4. Dental laboratory technician
5. Dental hygienist
6. Dental assistant
7. Ophthalmic assistant
8. Occupational therapy assistant
9. Food service assistant
10. Medical technology
11. Optometric technology

The phrase "education programs" refers to one or more curricula which prepare students for employment in one of the allied health fields listed above and excludes courses which are required for admission into these curricula. The statutory formula amount is equal to the product obtained by multiplying $5,000 by the number of educational programs which are included in the approved application plus the product obtained by multiplying $500 by the number of full-time students receiving training in such curriculum on October 15 of the federal fiscal year in which application is made. The number of full-time students in programs leading to the baccalaureate or above degrees are only students who are enrolled in the final two years plus those enrolled in any part-baccalaureate clinical experience (not exceeding 24 months in length). In programs leading to the associate degree, only the students enrolled in the final year may be counted.

Also to continue receiving a basic improvement grant, a training center must increase its enrollment by 2.5 percent or three students each year unless this requirement would lower educational quality.

Special Improvement Grants

To help maintain, improve, or provide specialized functions in training allied health workers, special improvement grants will be given on a project basis. To be eligible, a center must provide instruction in at least three allied health curricula, have approved application for a basic improvement grant, and have its plan and relative financial need considered by the Surgeon General.

Construction Grants for Teaching Facilities

To encourage the creation of new allied health teaching and training facilities and the replacement or rehabilitation of old facilities, training centers and affiliated hospitals will be eligible for construction grants. This aid should permit substantial increases in enrollments and secure a more balanced geographic distribution of instructional facilities. Construction grants are authorized up to two-thirds of the cost of new training centers or major construction, and up to one-half the cost of other construction.

Project Grants

Project grants are intended to spur the development of curricula for new and emerging occupations. These are development grants for new allied health professions--for projects to develop, demonstrate, or evaluate curricula for the training of new types of health technologists. Projects to develop curricula for expanding the scope of the functions of existing allied health personnel, as well as for regrouping selected duties currently performed by allied health personnel in order to meet new needs created by advances in the health sciences, are within the scope of the program. This program covers some 16 health occupations. The basic requirement and eligibility policies are applicable.

Advanced Traineeship Grants

These awards to training centers as administration grants will cover tuition, fees, stipends, and allowances for the trainers. The purpose is to provide advanced training for allied health professionals to prepare them:

1. To teach health service technician or allied health professions personnel.
2. To serve in administrative or supervisory capacities in the allied health professions.
3. To provide services in those allied health professional specialties which require such advanced training.

Opportunity Grants for Nursing Education

These are grants and contracts to attract capable young people of exceptional financial need into nursing and to permit the transfer of construction funds provided under the PHS Act between categories of nursing schools when funds are not being utilized.

Amendments to the Health Professions Education Assistance Act

These amendments are designed to encourage practice in poor rural areas by forgiving physicians, dentists, and optometrists for their federal education loans up to a total of 100 percent at the rate of 15 percent of each year of practice in such an area. Other means of encouraging such practice are by extensions of the current loan program and terms of the Health Educational Assistance Act and the Nurse Training Act and by the formation of two revolving funds for the implementation of these acts.

MANPOWER NEEDS FOR BETTER HEALTH SERVICES

Surgeon General William H. Stewart has stated:

> At the outset, we have to admit that we have not been overwhelmingly successful in using the talent we already have. Medical research has been quick to catch the accelerating tempo of our times. By comparison, medical practice has been slow. We are barely beginning to exploit the potential of automation. The organizational patterns of health service are not yet generally adapted to the widespread delivery of the right care to the right patient at the right time. We have not yet mastered the effective employment of specialization; we are just starting to pass through the managerial revolution that has reshaped industry and sciences.
>
> There are, however, many hopeful signs. Routine chores are increasingly delegated to assistants. Computers are being allowed to do the things they can do faster and better than people. I believe that the day is rapidly approaching when health professionals and their associates will be using their highest skill far more efficiently in behalf of their patients.
>
> Even when that day arrives some questions will remain to be answered. The abstract problem of applying health manpower to health need is at root a human problem and must be considered in human terms. . . . We are dealing with

> individual human beings who, we hope, will choose to enlist in the health enterprise and serve it to the height of their capacity. Their free choice can be our greatest asset. If we perform our training function well, and if we design our health resources so as to encourage full individual development, we will achieve the kind of competence and dedication we need to advance the health of our people.

To get at the policy as stated by Dr. Stewart we need a systematic planning for health manpower. What then is health manpower planning? Very simply, it is the process of trying to make sure that we shall have enough health workers to meet, but not exceed, the future "effective economic demand" for their services. "Effective economic demand" is defined as the perceived needs backed up with willingness and ability to pay.

A simple analysis of the problem might include the following:

1. Supply analysis--measuring the current supply of all types.
2. Projection of supply--projecting the supply of health workers forward to target dates ten and twenty years in the future with anticipated additions of new graduates and estimated subtraction for death, migration, retirement, and various changes in the profession.
3. Demand analysis--evaluating the "effective economic demand" for health services from both the private and public sectors.
4. Projection of demand--projecting the "effective economic demand" forward to the ten- and twenty-year target dates.
5. Matching supply and demand--comparing the projected supply with the projected demand and recommending necessary adjustments to effect a balance.

I will now attempt to list some of the problems that are encountered in health manpower planning and some of the needs in this area.

Supply Analysis

The biggest problem here is who to count; that is, properly defining and classifying health workers. Moreover, there is a need for information on the number of teachers in the health professions. These types of data would be useful for measuring the capacity for expanding schools in the health professions.

The major source of supply information is the number of graduates of training institutions. However these data must be refined with reliable estimates of death, retirement, migration, etc. There is also the problem of subprofessional categories where formal training is not done in educational institutions. Licensing institutions can be a source of supply information, but there are professions that do not require licensing. Also, professionals working for licensed persons are not recorded by licensing institutions. Other sources of supply information are professional registries, special registrations, census data, and special surveys.

In addition to knowing the total number in each health occupation, it is necessary and important to know their distribution by age, sex, income, type of practice, time of practice, geographic location, educational background, and specialization. Special studies of productivity, number and type of assistants, professional and student attitudes on retirement, migration, rural practice, reasons for selection of the profession, reasons for not being in the work force, reasons for returning into the work force, and reasons for changing profession, are also needed.

The change of supply may be divided into losses and increases. Losses are primarily by retirement, death and migration (also change of occupation, marriage, childbirth, illness, etc.). Losses from death can be estimated by dividing all registered deaths of professionals in each age group by the population of professionals in each age group. A second alternative is the use of age-specific death rates for the general population, assuming that the professional death rates equal the general death rate. This second method may lead to large errors. A third alternative is to apply a correction factor to the general mortality rates, either a more favorable or less favorable rate than the general population.

Retirement is usually the greatest source of loss to the profession, especially for a predominantly male occupation. The female worker represents an entirely different problem area that needs much more detailed studies. As the basic education requirements go from high to low, the losses for the various reasons change not only for the female in the work force but also for the male. Losses by migration (turnover rates, return rates) need much more detailed study and research. Here again the rates and distance migrated will vary according to the basic educational requirements of the occupation (including sex differences).

There is only one major source of new health professionals--the training schools. It is not enough merely to know the number of graduates; the plans for increasing or decreasing the number of graduates must also be known. Other problems related to graduates are the recruitment, retraining, and attrition of students through failure; change of study area; change in the primary work area after graduation; and shifting from a highly trained specialty to a more administrative area of work where less of the long and specialized training are utilized. This last is a wastage that is commonly recognized but may be more crucial in the health area.

There are four basic factors that determine a country's potentials for increasing its number of trained health professionals: (1) qualified raw materials; (2) educational plant capacity; (3) potential for increase in capital or funds available for expanding training facilities and paying for the recurring cost of training and education; and (4) the availability of teachers. The last is probably the most important determinant in the health manpower field because of the long time lag in preparing a teacher.

Demand Analysis

One approach to determining the demand for health professionals is the basic biological need determination. The basic biological need determination is based on determining the level of mortality and morbidity of an area, estimating the time of health professionals needed

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to care for each type of case, and multiplying the time per case by the estimated annual number of cases. This total number of professional hours must then be divided by the average hours worked per year by health professionals to determine total supply of health professionals required to meet basic biological needs.

The most common measurement of demand is the ratio of professionals to existing population.

There are many factors which must be taken into account when talking about projecting demand. The most obvious factor is the change in the population. A second factor is the stage of economic development since this may affect demand as higher per capita income can afford and demand more medical services. The availability (change of supply) of physicians may open up the demand for services, especially in some rural areas. The age distribution of population may be cause for the need and demand for medical services. Other factors such as changes in disease patterns, medical knowledge, education of the general public (mass communication), immunological (preventive medicine) and technological advances, and social and organizational change may be very important in the changing pattern of demand but are virtually unpredictable.

Matching Supply and Demand

To attack predicted shortages the most direct action is to increase enrollments in the training institutions and increase the number of training institutions. Next is the use of more supporting and auxiliary personnel, and third is to increase the productivity of the professional (i.e., better man-machine approach, etc.).

SOME APPLIED RESEARCH PROGRAMS

Some basic data have or are being collected in the health manpower field. Programs to fill gaps in statistics on the number of persons (total by occupation) actually employed and those needed to provide the demanded medical services in any given area are needed. There must be recurrent data collection for guidance in planning health manpower programs. We also need research projects on many individual problems of health manpower needs and utilizations, ranging from specialized subjects relating to specific health occupations in particular localities to the broad subject affecting the economy as a whole. For example, it would be desirable to study in detail the manpower implications, in terms of number and kinds of health workers to train, of providing vast and comprehensive health programs. It would also be desirable to initiate projects designed to experiment with developing new ways of meeting health manpower needs, and projects designed to provide new measures and criteria to evaluate the need for changes and the number and kinds of employees required in relation to existing new methods and standards of health care, and in relation to differences in technological and other characteristics of health facilities. Projects are also needed on the scope and description of training programs of all kinds, by which both recruits and experienced workers can learn either new or traditional health specialities. Studies are needed on many other subjects relative to the utilization, demand, and supply of health workers in the local, state, national, and international fields. Data now available on some of these subjects are very incomplete or lack the currentness of analysis methodology to accomplish the above. This is a large order, but this I hope is the challenge I leave with you.

II. Regional and Area Development

The first of these four papers is written by Dr. Karl Fox and concerns itself with functional economic areas (FEA). The FEA is a home-to-work commuting field and a relatively self-contained labor market. It is an ideal unit for regional social accounts because of its relative self-containment. Dr. Fox introduces the idea that a national system of FEA's could be used to appraise the regional impacts of federal economic policies and programs.

Dr. Martin McGuire authored the next paper and describes the recent work of the Economic Development Administration. The aim of this work was to estimate, for planning purposes, the dimensions of area economic distress, and to identify the relevant trends which influence geographical patterns of low income and high unemployment. The primary element in the analysis consists of comparisons of alternative population, labor force and employment projections on a county-by-county basis for the year 1975.

The third paper deals with the mission and operation of the area vocational schools and area community colleges in Iowa. Dr. Trevor Howe gives a brief account of the formation of the fifteen merged areas in Iowa for the operation of area community colleges and area vocational schools. He also discusses the services these schools will provide and their curriculum development. The paper ends with a discussion of the schools' implications for manpower development.

Dr. Kenneth Wold's paper deals with the role of the state research coordinating units. These units have many objectives, among which are identifying problems needing research, stimulating research, and collecting and disseminating information in the area of employment opportunities, educational programs, and human resources. For the future the Iowa unit must help build an even more constructive research program in vocational and technical education in Iowa.

Chapter 6

The Emergence of Multi-County Functional Economic Areas as Labor Markets and Commuting Fields

Karl A. Fox

FUNCTIONAL ECONOMIC AREAS AND CONSOLIDATED URBAN REGIONS

In November 1964, the Social Science Research Council appointed a Committee on Areas for Social and Economic Statistics. This Committee was terminated in September 1967 upon completion and review of the major project it had sponsored: a reexamination of the criteria by which the present Standard Metropolitan Statistical Areas have been defined to provide uniform areas for the publication of Census and other data relevant to metropolitan problems, and an evaluation of alternative principles of classification, such as the concept of functional economic areas.

Study of Principles of Metropolitan Area Classification

The committee's major study, planned and initiated in 1965, was directed by Brian J. L. Berry and conducted at the University of Chicago with support provided by a contract between the Bureau of the Census and the Social Science Research Council. The study resulted in a report,

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"Functional Economic Areas and Consolidated Urban Regions of the United States," which (after preliminary review of its findings at a conference in Washington in December 1966) was transmitted in May to the Bureau of the Budget for further study and possible future action. The principal findings of the study were formally approved by the committee at a meeting on September 1, and are summarized in the following paragraphs.

Three sets of criteria were used by the Bureau of the Budget in 1960 in an attempt to redefine Standard Metropolitan Statistical Areas that would conform to the general concept that a metropolitan area is essentially a large integrated economic and social unit--a county or a group of contiguous counties--with a recognized large population nucleus. The most basic criteria were (1) that the SMSA include a legal central city of at least 50,000 population, or "twin cities" totaling 50,000; (2) that 75 percent of the labor force of each county included be nonagricultural and live in contiguous minor civil divisions with a population density of at least 150 persons per square mile; and (3) that at least 15 percent of the workers in each county included commute to the central city.

Each of the criteria has been the subject of criticism. For example, 50,000 has been said to be both too small and too large, and the use of the legal central city rather than an urbanized area has been challenged. Some have said that the urban-rural distinctions implied in the criteria of metropolitan character have no meaning in a society whose way of life is becoming almost completely urbanized. Similarly the 15 percent cutoff on intensity of commuting has been said to make little sense since it excludes part of the metropolitan labor market. The study directed by Berry found, however, that the 1960 classification of SMSA's stems not from all three criteria, but fundamentally from only the first two--size and metropolitan character. The size criterion determined how many SMSA's there would be, and that of metropolitan character determined which contiguous counties (if any) would be joined with the central counties. In effect, the map Standard Metropolitan Statistical Areas of the United States, prepared by the Bureau of the Budget, thus presents a uniform regionalization of the country divided between "metropolitan" and "nonmetropolitan" categories with the former divided into more than 200 segments.

The principal import of criticisms of the 1960 area classification is twofold. First, visual criteria such as density and contiguous subdivision are no longer regarded as relevant for purposes of area classification because--whatever the outward appearance--society, economy, and way of life are all highly urbanized. Second, meaningful integrated social and economic areas must be far more extensive than the sections of the United States classified as SMSA's in 1960. If labor markets, retail and wholesale shopping patterns, communication by mass media, or any other index of integration are examined, one will find that the entire country consists of a set of functional economic areas centered on urbanized areas. Further, with improvements in transportation and communication, these FEA's are being transformed rapidly into urban realms which are characterized not by a single central city but by a specialized, multifocal organization. These criticisms indicated the need for a detailed analysis of the feasibility of subdividing the country into integrated socioeconomic areas.

There had been no prior complete, consistent, comparative analysis of the spatial organization of the United States into functional economic areas.

Rand McNally produces a map which allocates the counties of the United States into "Basic" and "Major" wholesale trading areas; Bogue and Beale have subdivided the country into state economic areas;[1] and reports dealing with specific parts of the country have been published, for example, by the Upper Midwest Economic Study. Also, federal agencies continue to define exhaustive sets of service areas, and state labor departments produce reports on commuting patterns and labor markets. A considerable gap in our knowledge of the country was evident, however.

Commuting Patterns, 1960

An original analysis was needed of the functional regionalization of the United States in 1960, based on criteria of integration. Here, fortunately, the Bureau of the Census provided a rich supply of unpublished journey-to-work data from the 1960 Census. A regionalization was sought that would classify the United States into a set of economic areas based on the commuting behavior of the population in 1960 (i.e., on linkages between place of residence and place of work).

In the study a 43,000 x 4,300 data matrix was analyzed in which the workers residing in the 43,000 census tracts and "pseudo-tracts" of the United States (standard location areas) had been cross-classified by place of work according to a list of 4,300 possible workplace areas. Unfortunately, there were problems of both sampling error (the data came from the Census 25% sample) and systematic bias to contend with, but with these limitations it was possible to define the "commuting fields" and "labor markets" of the United States. On this basis functional economic areas were defined (1) for the set of central cities of the SMSA's recognized in 1965 and (2) for additional independent regional centers of less than 50,000 population in the less densely settled areas of the country. In addition, consolidated urban and metropolitan regions were created out of groups of labor markets, to take account of cross-commuting. Considerable experimentation led to the following definitions:

Commuting field: an area encompassing all standard location areas sending commuters to a designated workplace area. The field varies in intensity according to the proportion of resident employees in each SLA commuting to the workplace, and may be depicted cartographically by contours that enclose all areas exceeding a stated degree of commuting.

Labor market: all counties sending commuters to a given county.

Central county: the designated workplace area for definition of a labor market.

Central city: the principal city located in a central county.

Functional economic area: all those counties within a labor market for which the proportion of resident workers commuting to a given central county exceeds the proportion commuting to alternative central counties.

Metropolitan economic area: an FEA in which the population of the central city exceeds 50,000, or in which there are twin cities satisfying criteria of existing SMSA definitional practice.

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[1] Donald J. Bogue and Calvin L. Beale, Economic Areas of the United States, Glencoe: Free Press, 1961.

Consolidated metropolitan region: two or more FEA's and/or MEA's (at least one must be an MEA) in which at least 5 percent of the resident workers of the central county of one commute to the central county of another.

Consolidated urban region: two or more FEA's and/or MEA's in which 5 percent of the resident workers of any part of one commute to the central county of one of the others.

Maps depicting the extent and complexities of interdependence among areas of the United States were prepared. Examination of these yielded the following conclusions: (1) Commuting fields (FEA's that enclose both place of residence and place of work) are far more extensive than the areas classified as SMSA's in 1960. (2) In the more densely settled parts of the country, commuting fields are not mutually exclusive but overlap in complex and extensive ways. (3) Independent regional centers of less than 50,000 population are the hubs of labor markets in the less densely settled sections of the country, paralleling in their role centers of greater population where settlement is thicker. (4) With the exception of national parks, public lands, and areas with extremely low population densities, the entire area of the United States is covered by the network of commuting fields. It was found that 95.85 percent of the population of the country lived within the set of FEA's and MEA's ultimately defined--86.62 percent in the MEA's--compared with the some two-thirds of the population that was counted in the 1960 SMSA's. Almost the entire population of the United States lived in areas in which at least some portion of the residents had jobs in large urban centers.

Further exploration of commuting between outlying areas within the larger commuting fields of central cities led to two further conclusions: (1) A central county containing a central city and other area is an appropriate focus for a single commuting field, because the individual commuting fields of the two components are virtually identical and because the commuting fields of all outlying counties nest within that of the central county. (2) Labor markets made up of county units are sound approximations to commuting fields defined on the basis of tract (SLA) data, involving relatively little loss of information.

On the assumption that it remains useful to construct labor markets with county units, FEA's can be defined most readily from a county-to-county commuting matrix. To ensure a mutually exclusive allocation of counties to FEA's, the greatest percentage flow seems the simplest and most logical criterion. (If a population-size distinction is desired, it can be applied by differentiating some subset of the FEA's, e.g., MEA's focusing on an SMSA.) Use of county-to-county commuting data permits allocation of all the settled parts of the United States into a set of functional economic areas.

In some parts of the country there is substantial cross-commuting. Recognition of this is possible in a consistent set of consolidated regions. These may be defined by combining MEA's and/or FEA's that evidence significant degrees of cross-commuting.

Implications and Recommendations

The uniform regionalization of the 1960 SMSA's and the functional regionalization evidenced by commuting behavior are significantly different. The Bureaus of the Budget and of the Census thus face a major choice, for the 1960 classification does not produce fully integrated areas on the basis of how they look? In this case, continuation of present practice will suffice. Alternatively, should the areas embrace people with common patterns of behavior? If so, commuting data which deal with daily behavior and the links between place of residence and place of work are relevant. Comparability is not the issue if county units are used. Besides, there has been no consistency in definitional practice since inception of attempts to define metropolitan areas. Nor should consistency be expected in a dynamic socioeconomy in which pattern of organization and behavior are subject to continuing change.

The problem of choice is difficult since there is general agreement that some form of area classification will be required for publication of summary statistics for some time to come. The report of the study concludes with the following recommendations:

1. That counties or equivalent units be retained as the basis of any area classification, in all parts of the country.

2. That county-to-county commuting data be the basis of the classification of counties into functional economic areas.

3. That functional economic areas be delineated around all counties containing central cities of more than 50,000 population, and also be created for smaller regional centers in the less densely populated parts of the country.

4. Where significant cross-commuting takes place, functional economic areas should be merged into consolidated urban regions.

5. Studies should be undertaken to determine whether additional criteria of integration (for example, wholesaling) might lead to realistic merging of smaller western functional economic areas into larger urban regions, to exhaust the land area of the country, just as the FEA's embrace all but 4 percent of the population; and also to satisfy some minimum total population for an economic region.

Figures 6.1 and 6.2 were not included in the published version of this article. However, Figure 6.1 (dot map) shows the geographical distribution of the entire population of the United States in 1960. Figure 6.2, prepared by Brian J. L. Berry as part of the study we have described, shows the areas within commuting range of cities of various size categories as of 1960. Berry's companion map of functional economic areas of the United States (not shown here) approximates each commuting field by means of a cluster of whole counties. The clusters are mutually exclusive, and counties in the gaps between commuting fields are left unallocated. Although these gaps include a great many square miles of mountain, desert, and forest country, they include only 4 percent of the total U. S. population as of 1960.

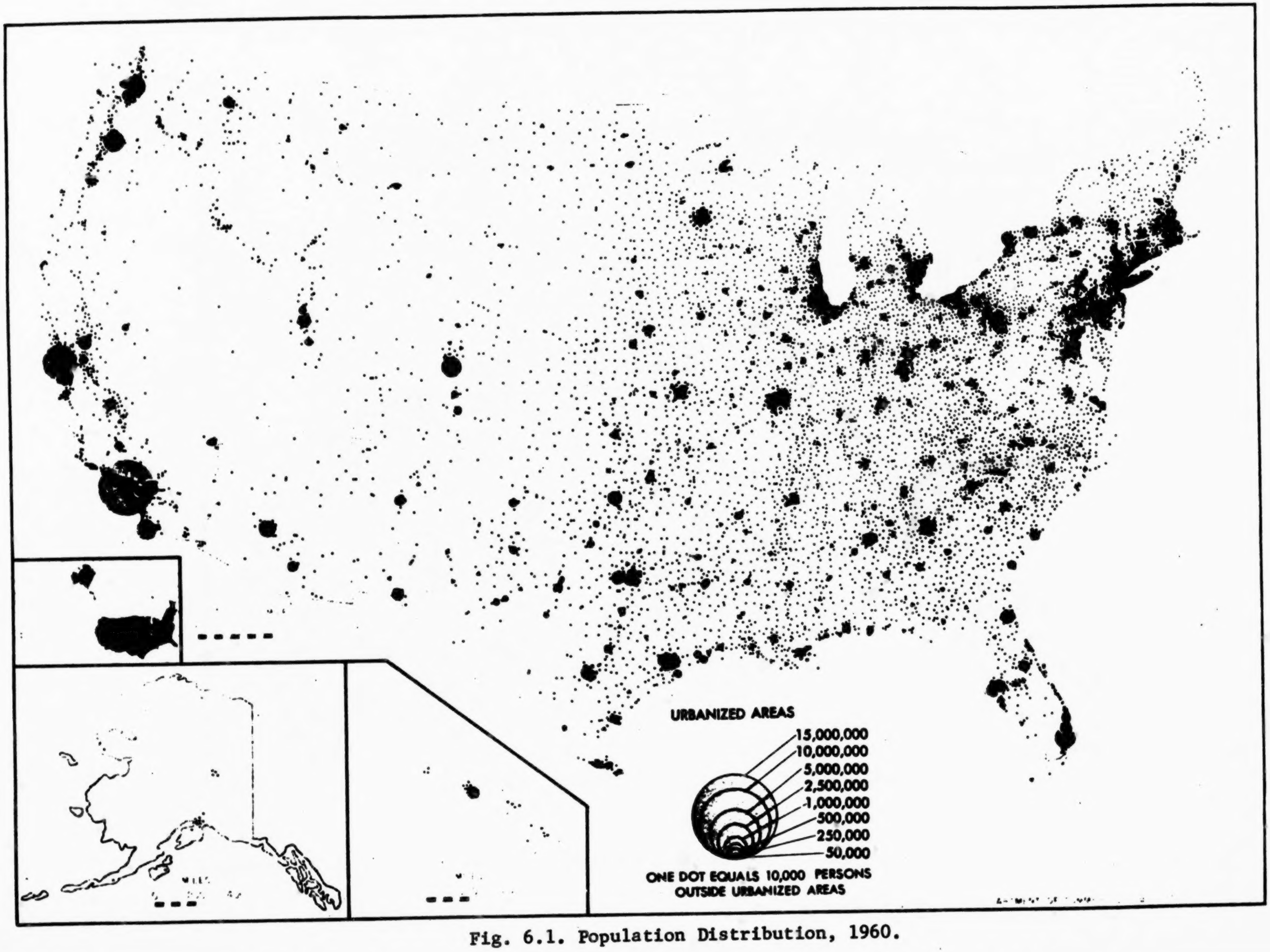
URBANIZED AREAS
15,000,000
10,000,000
5,000,000
2,500,000
1,000,000
500,000
250,000
50,000
ONE DOT EQUALS 10,000 PERSONS
OUTSIDE URBANIZED AREAS

Fig. 6.1. Population Distribution, 1960.

Prepared by Brian J. L. Berry, University of Chicago, May 1967.

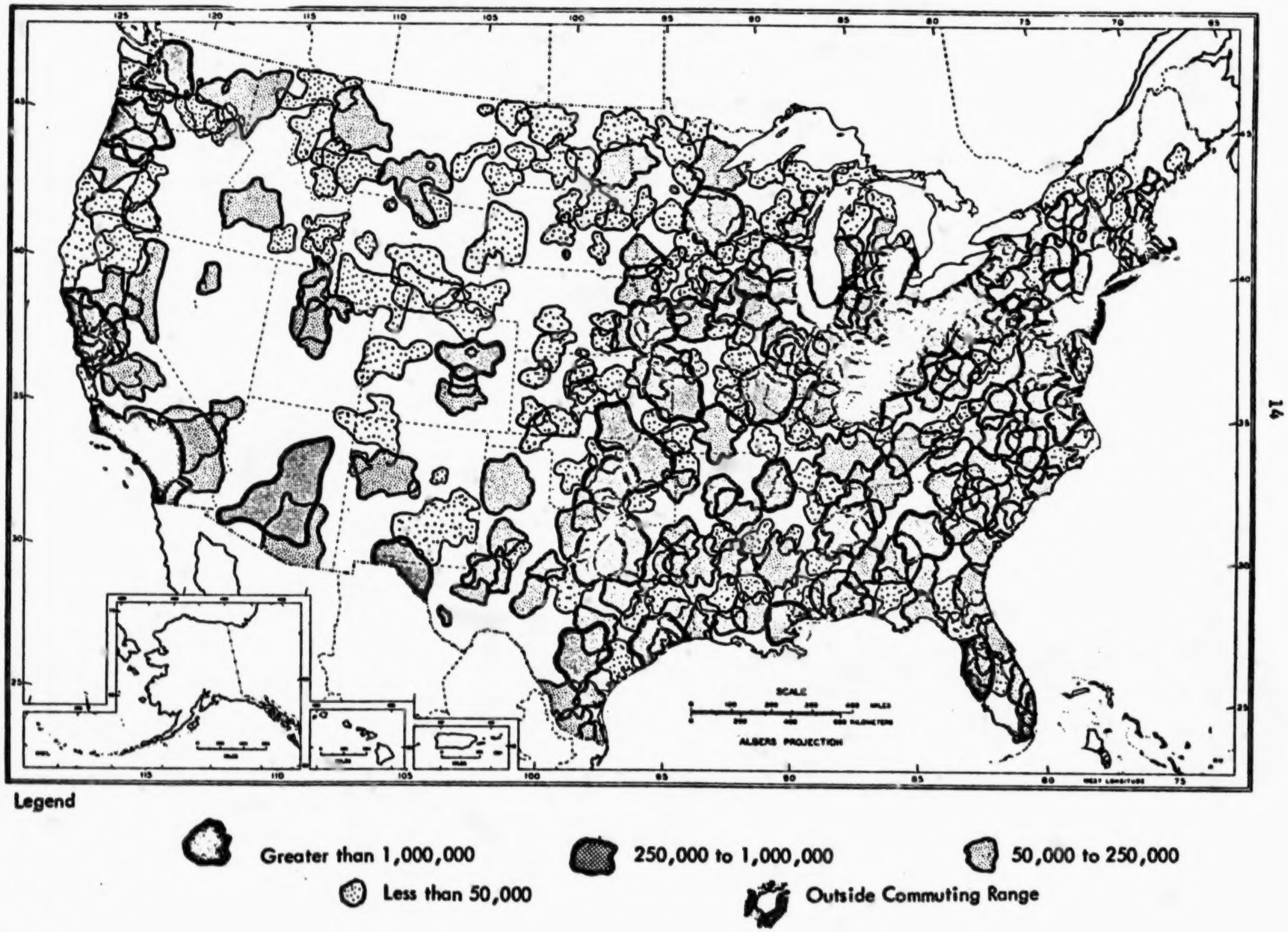
14
SCALE
ALBERS PROJECTION
WEST LONGITUDE
Legend
Greater than 1,000,000
250,000 to 1,000,000
50,000 to 250,000
Less than 50,000
Outside Commuting Range

Fig. 6.2. Areas within commuting range of cities of various size categories.

FUNCTIONAL ECONOMIC AREAS: IMPLICATIONS FOR SOCIOECONOMIC ANALYSIS AND POLICY

Origin

Early papers (1962-64)[2] about functional economic areas stated a number of propositions about them:

1. An FEA is a home-to-work commuting field.

2. An FEA is a relatively self-contained labor market in a short-run, economic stabilization context.

3. In FEA's with populations of less than half a million or thereabouts, the "regional" shopping area tends to coincide with the commuting field.

4. Because of its relative closure (self-containment) with respect to the home-to-work commuting trip and to most resident-oriented retail and service activities, the FEA should be an ideal unit for regional social accounts.

5. An FEA can be approximated reasonably well by a cluster of contiguous whole counties.

6. In contrast with most individual counties, an FEA lends itself to area development planning by virtue of its larger population base, wider array of leadership and professional talent, and relative closure as a commuting and retail trade area (so that most of the benefits from programs initiated in the FEA will accrue to its own present and future residents and taxpayers).

7. FEA's approximated by clusters of contiguous whole counties could evidently be delineated for all but the most sparsely populated regions in the United States.

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[2] To the best of my knowledge I originated the functional economic area concept in a March 1961 paper entitled "The Concept of Community Development." I developed the concept further in a series of invited papers during 1962-64. Their titles suggest some of the practical concerns to which I was addressing myself: "The Study of Interactions Between Agriculture and the Non-Farm Economy: Local, Regional and National" (February 1962); "Delineating the Area" (January 1962); "The Major Problem of Rural Society" (December 1962); "On the Current Lack of Policy Orientation in Regional Accounting" (December 1962); "Economic Models for Area Development Research" (May 1963); and "Integrating National and Regional Models for Economic Stabilization and Growth" (March 1964).

8. FEA delineations could be used to disaggregate national economic and social statistical magnitudes into a set of areas, each of which would have desirable properties with respect to social accounting, employment stabilization policies, economic development planning, and the provision of a wide array of public services.

In October 1964 the functional economic area concept was formulated in a more rigorous way. Many policy-oriented people had found the concept appealing on a pragmatic basis; the 1964 formulation made it more appealing to location theorists, regional scientists, and quantitative geographers. At first glance some action-oriented people are startled by the compass orientation of the squares in Figures 6.3 and 6.4. But their confidence returns when they recognize (1) that the areas can still be represented rather well by clusters of whole counties and (2) that the orientation of the squares reflects an "ideal" rectangular road grid with properties which are approximated only crudely by any real road system.

Significance in Iowa

The significance of the rotated squares in Figures 6.3 and 6.4 is as follows:

1. Iowa, like some other midwestern states, has an almost complete grid of "section roads" one mile apart and oriented either east-west or north-south. Each mile of road forms one side of two adjacent square miles of land; a complete grid would contain two miles of road for every square mile of area. Iowa approaches perfection in this respect; the area of the state is about 56,000 square miles and the Iowa Highway Commission presides over approximately 112,000 miles of open-country roads! There are relatively few diagonal roads in Iowa.

2. If we start at the center of a rotated square, we can reach any of its four corners by traveling 50 miles over an actual road. If we want to reach some point on (say) the northwest side of a square we must also travel 50 miles--for example, 40 miles west and 10 miles north, or 25 miles west and 25 miles north. Hence, given the rectangular road grid, each square is the locus of points 50 highway miles from the center of the square.

3. If we can travel at an average speed of 50 miles an hour over every segment of the road grid, the boundary of a square is also the locus of all points from which the commuting time to the center of the square is 60 minutes.

4. Few people are willing to commute more than 60 minutes each way for long periods. Thus a 60-minute perimeter may serve as a reasonable first approximation to a commuting field. The area of each square in Figures 6.3 and 6.4 is 5,000 square miles, equivalent to 8 or 9 counties of the sizes usually found in the Midwest.

In this study we are mainly concerned with functional economic areas as alternatives to SMSA's. Figure 6.3 indicates that an FEA system can readily incorporate the existing system of SMSA's. The shaded areas in Figure 6.3 are the seven 1960 SMSA's which were wholly or partly in Iowa. In each case, a 50-mile commuting radius around the central city of the SMSA completely encloses the SMSA itself. As both SMSA's and FEA's are made up of whole counties, continuity with 1960 and earlier data could be achieved for either type of area.

Seven of the squares in Figure 6.4 are identical with those in Figure 6,3. In addition, Figure 6.4 shows 50-mile squares around several smaller cities in Iowa (and around some cities in adjoining states). The smaller FEA central cities in Iowa include Fort Dodge, Mason City, Ottumwa, Burlington, and Spencer. Collectively the 50-mile squares in Figure 6.4 include about 80 percent of the area and 90 percent of the population of Iowa. We should remember also that these squares are only first approximations to the actual commuting fields.

To achieve completeness in a national system of social and economic data, counties in the gaps between commuting fields could be allocated to one FEA or another on the basis of retail trade patterns or highway travel times. Alternatively, the policy implications of the larger gaps could be highlighted by showing them as separate interstitial areas. Figure 6.4 shows that there is room for an FEA centering on Taylor County in southwest Iowa. However, Taylor County is nearly 100 highway miles from either Des Moines or Omaha-Council Bluffs. This is too far for long-term commuting. The obvious alternative is out-migration, and indeed, between 1950 and 1960, the number of young men in Taylor County aged 25 to 34 decreased by 41 percent! Presumably most of them moved into the commuting fields of FEA central cities in Iowa and elsewhere.

Potential Uses

The relative closure of FEA's as commuting fields makes them ideal units for a national system of regional social accounts. A national system of FEA's could also be used to appraise the regional impacts of federal economic policies and programs. For example, short-run employment targets could be established for each FEA and backed up by facilities in each FEA for vocational education, training, and retraining. A national employment service regionalized on an FEA basis could also promote mobility to actual jobs (rather than merely prospective ones) in other FEA's with tighter labor markets and stronger growth trends.

Consideration might reasonably be given also to stimulating the growth of some FEA's from their current populations of 100,000 or 150,000 to 250,000 or more. The contiguously built-up area of the central city might include only 100,000 or so people, but the whole multicounty area might be designed and zoned as an urban-regional entity with a central city, satellite towns, and open-country components.

Some functions often carried on at present by individual counties or towns might be better handled on a multicounty FEA basis. The following functions might be considered in this light:

School districts including public junior colleges and four-year colleges; centers for vocational education, training, and retraining, university extension and adult education programs; police and fire protection; public health services; social welfare services; the maintenance and construction of local or "secondary" streets and roads, as distinct from those connecting major population centers and maintained by state highway commissions; regional zoning; and public library services.

Functional economic areas have a strong affinity with Economic Development Districts, which are clusters of counties centered on a city of 20,000 or more population considered to be an actual or potential growth center. FEA's also have considerable affinity with ZIP code or mail delivery service areas.

In Iowa the FEA concept has been applied by the Iowa State University Extension Service to extricate itself from the traditional pattern of 99 separate county administrative units. Since 1966 its field operations have been reorganized on the basis of 12 multicounty areas, following FEA outlines so far as possible. (A state agency must, of course, serve residents of the gaps between commuting fields; also, when a central city lies on a state boundary, the state administrative area can include only one-half of the commuting field.)

Also in Iowa, 16 area vocational-technical school districts have been organized, following FEA outlines with minor modifications. The governor of Iowa has recommended that the field operations of state agencies be organized on the basis of 16 multicounty areas, again following FEA outlines quite closely apart from problems posed by state boundaries and gaps between commuting fields.

The spatial organization of the United States economy as indicated in Brian Berry's studies and my own leaves no room for the traditional rural-urban dichotomy. What we see today is a new synthesis of rural and urban society predominantly urban in tone. As an economic and cultural entity the city has surrounded the country, and rural poverty is largely concentrated in the interstices between urban commuting fields.

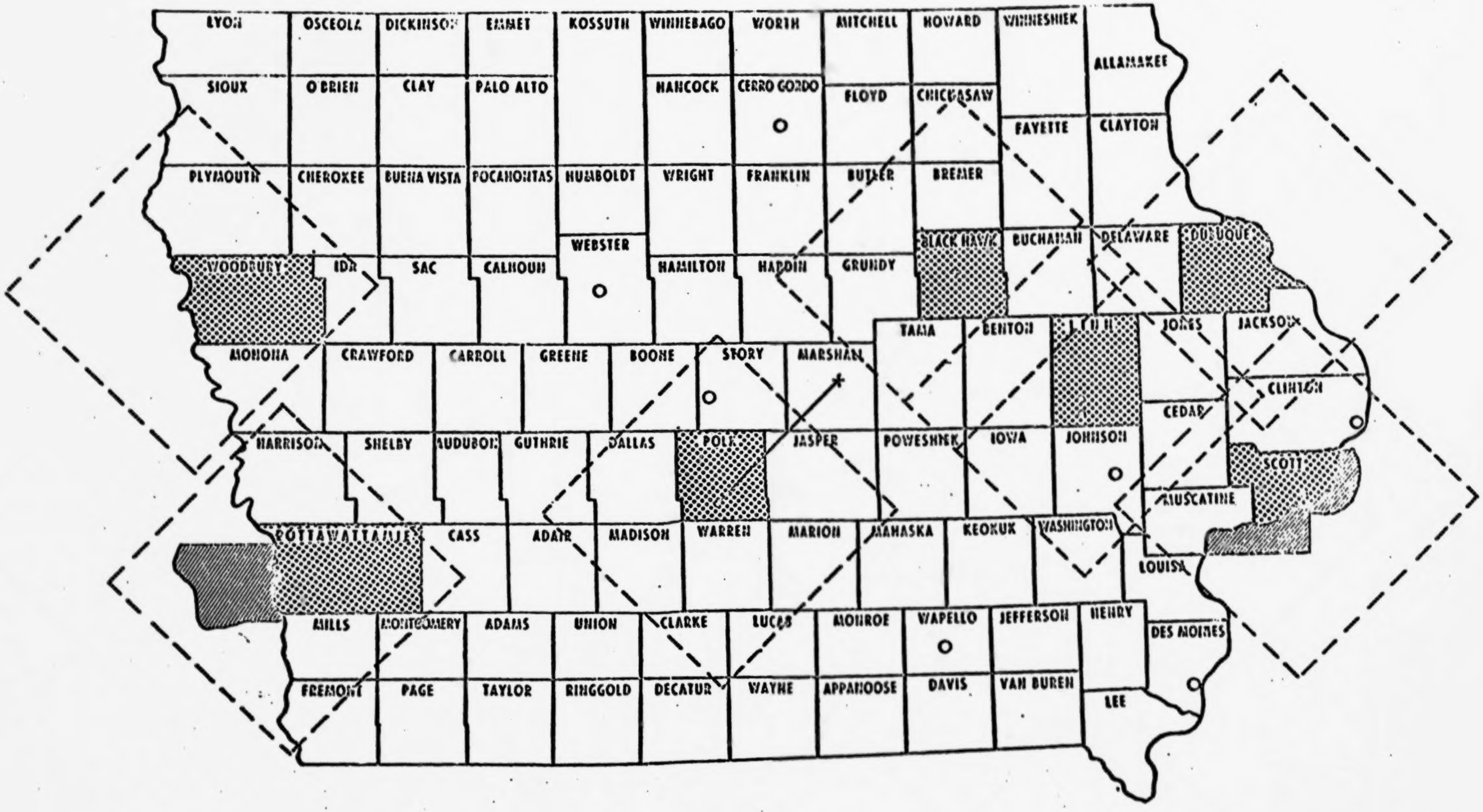
A national system of social and economic data based upon functional economic areas can greatly clarify public perception of the structure of our society and facilitate the solution of many problems which are erroneously dichotomized into urban and rural segments and agency jurisdictions. A major impediment to sound economic and social policy is our institutionalized belief that a rural society exists, and can be manipulated successfully, apart from the society as a whole.

CONCEPT OF A "MONONUCLEAR" FUNCTIONAL ECONOMIC AREA

Theoretical Model

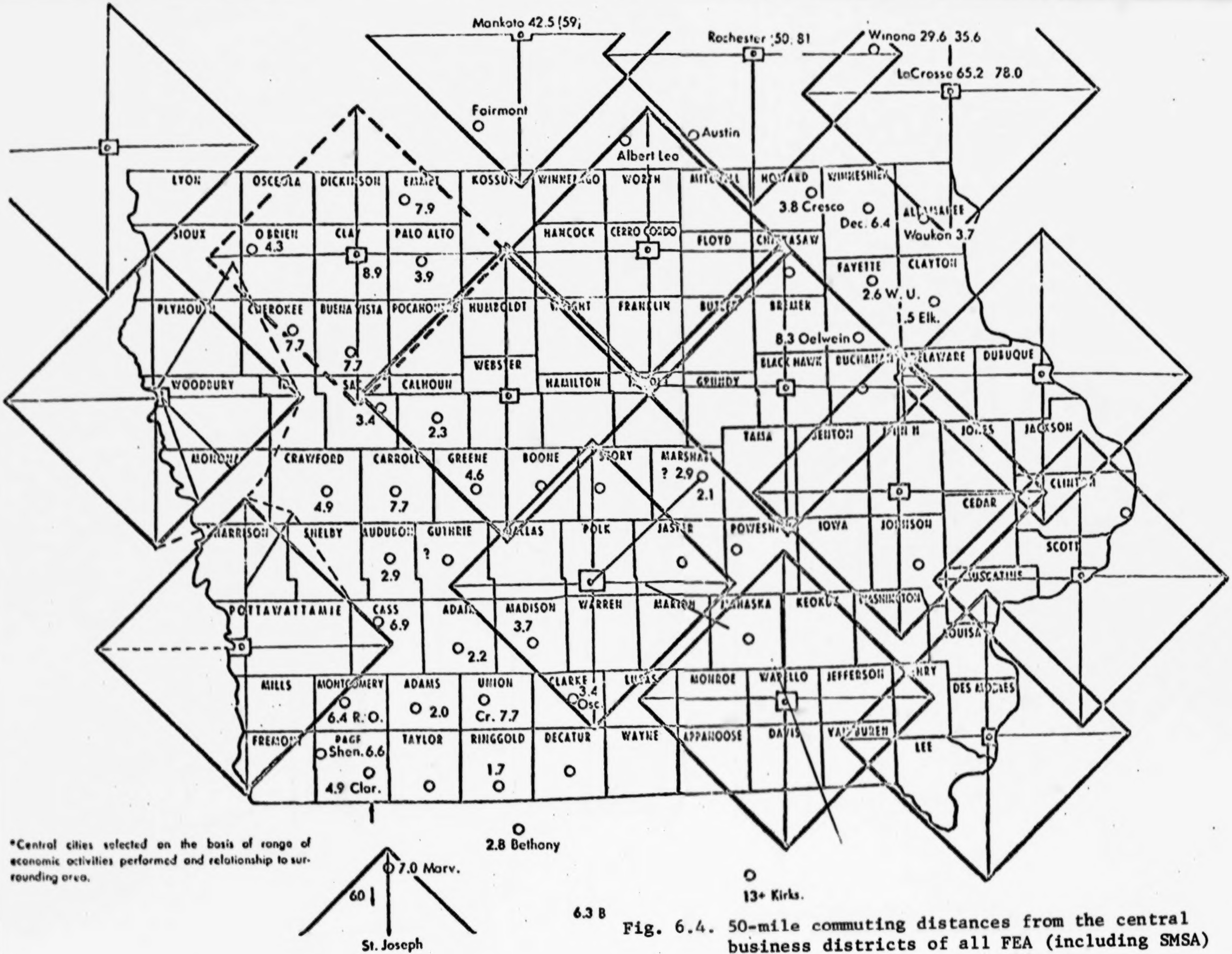
In traditionally agricultural regions most FEA's have central cities of less than 100,000 and total populations of less than 300,000. The largest (and often the only) bona fide department store in the FEA is in its central city. The trade area of the department store and of various specialty shops and services tends to coincide with the commuting field. For reasons to be presented shortly, I will call such an area a "mononuclear functional economic area" or mononuclear FEA.

I have emphasized the movement of farm and small-town people inward toward the central city in both commuting and migration contexts. It is also true that better roads and faster automobiles have encouraged people in the larger FEA central cities to disperse outward into neighboring suburbs or dormitory towns and into the countryside beyond. Dispersion from the central city also helps to integrate the surrounding area as an


LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
WEBSTER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CLINTON
CEDAR
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

*Central cities of 50,000 people or more in 1960. Each shaded county or pair of shaded contiguous counties are SMSA's.

Fig. 6.3. 50-mile commuting distances from the central business districts of Iowa SMSA cities.


Mankato 42.5 (59)
Rochester 50.81
Winona 29.6 35.6
LaCrosse 65.2 78.0
Fairmont
Austin
Albert Lea
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
3.8 Cresco
Dec. 6.4
Waukon 3.7
SIOUX
O BRIEN
4.3
CLAY
8.9
PALO ALTO
3.9
7.9
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
2.6 W. U.
1.5 Elk.
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
8.3 Oelwein
7.7
7.7
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
3.4
2.3
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
4.9
7.7
4.6
? 2.9
2.1
CLINTON
CEDAR
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
SCOTT
2.9
?
MUSCATINE
POTTAWATTAMIE
CASS
6.9
ADAIR
MADISON
3.7
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
2.2
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
3.4
Osc.
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
6.4 R. O.
2.0
Cr. 7.7
FREMONT
PAGE
Shen. 6.6
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
4.9 Clar.
1.7
2.8 Bethony
13+ Kirks.
7.0 Marv.
60
St. Joseph
6.3 B

*Central cities selected on the basis of range of economic activities performed and relationship to surrounding area.

Fig. 6.4. 50-mile commuting distances from the central business districts of all FEA (including SMSA) central cities in or near Iowa.

urban commuting field. Industrial plants and shopping centers just outside the central city serve to extend its economic reach in terms of both workers and shoppers.

In Figure 6.5 we portray a mononuclear FEA in idealized form. We assume that a wide stretch of territory is organized into identical 60-minute commuting fields (on a rectangular road grid), each with its central city of 50,000 or so population. If the pattern is perfectly regular, it will take 120 minutes to travel from any one of these central cities to any of eight other central cities which will be equidistant from it in terms of travel time. Each central city provides some specialized goods and services not available anywhere else in its commuting field. We will call these "R-level goods"; the R-level trade area is coextensive with the commuting field and hence with the FEA itself. Each central city will also provide a full selection of less specialized goods and services which we will call "D-level goods" and "N-level goods." The three letters R, D, and N in our notation stand for "regional," "district" and "neighborhood."

A D-level trade area is smaller than an R-level trade area and larger than an N-level trade area.

Suppose there are groups of merchants who wish to sell D-level goods and who wish to shelter themselves as well as possible from direct competition with merchants in the central cities. The best places for such merchants to locate will be at points equidistant from the two (or more) nearest central cities. If the four corner points of a commuting field are chosen first by such clusters of merchants, there is room for a similar cluster of merchants at the midpoint of each side of the commuting field. Each of these clusters of merchants, or district shopping centers, is marked with a D. The trade area of each D-level center would have a radius of 30 minutes travel time. It is reasonable to expect that most of the persons employed in a D-level shopping center will live within its 30-minute trade area. The D-level centers will also sell N-level goods.

Suppose there is economic room for a third kind of shopping center containing a food supermarket and a number of smaller establishments. Once the D-level shopping centers are established, the optimal locations for the neighborhood centers are at points equidistant (30 minutes) from each of two or more D-level centers. If we choose the corner points of D-level trade areas for some of the neighborhood centers, the set is completed by locating other neighborhood shopping centers along the midpoints of the sides of D-level trade areas.

Each neighborhood or N-level trade area will have a radius of 15 minutes. In general we would expect workers in N-level establishments to elect to work in the center closest to their place of residence, or (in some cases) to choose a residence within 15 minutes of their preferred place of work.

We have noted that the central city provides not only R-level goods but D-level and N-level goods as well, and that each D-level center also provides N-level goods and services. Hence, in Figure 6.5 no shopper or worker need live more than 15 minutes from an N-center or more than 30 minutes from a D-center. The commuting field and functional economic area is defined by a 60-minute commuting radius around the R-level center.

In Figure 6.5 we have defined three levels of shopping centers and three corresponding types of trade areas. An R-level area is four times as large as a D-level area. However, in Figure 6.5 only one of the D-level areas is wholly contained within the R-level commuting field; the commuting

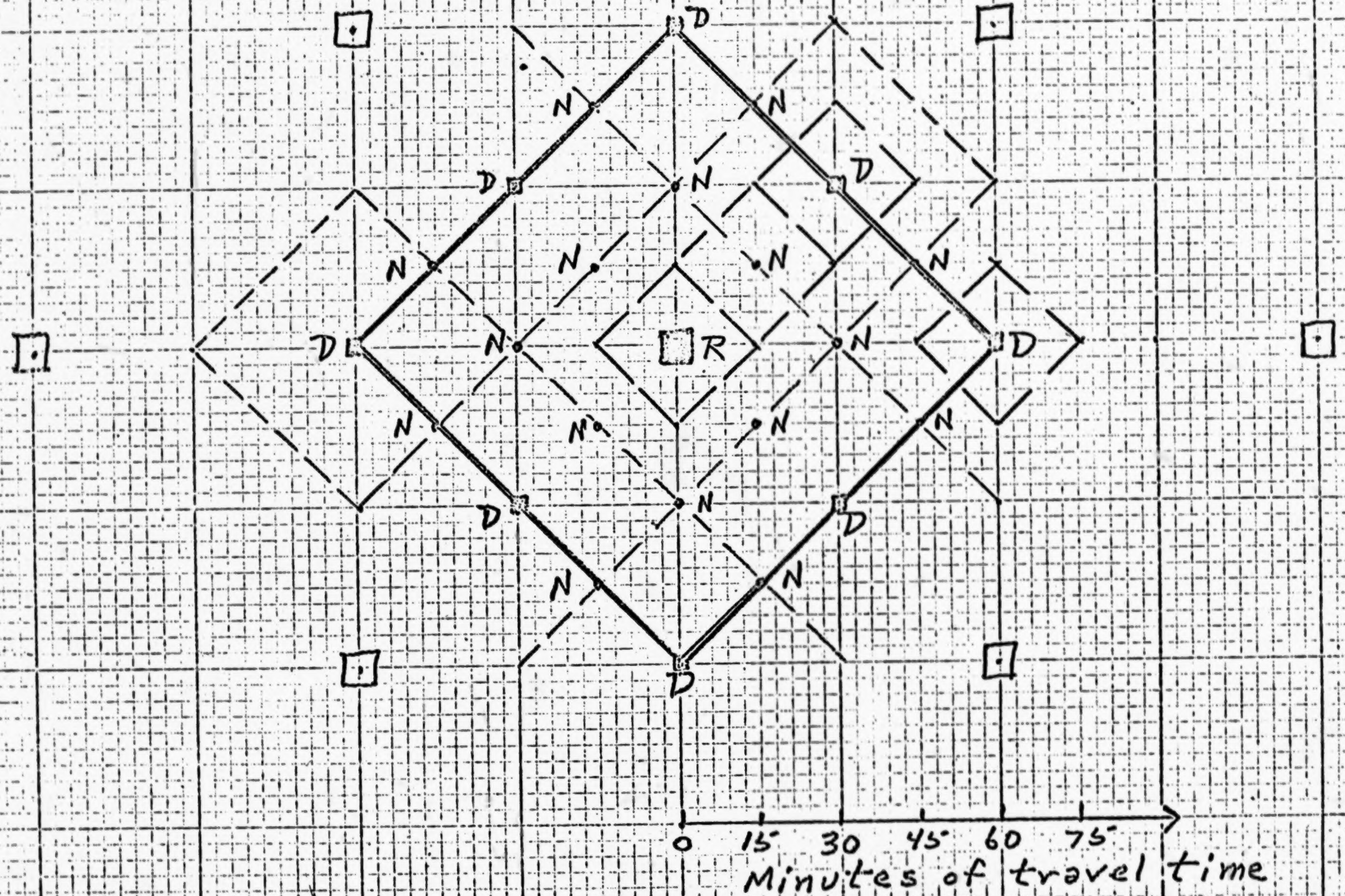

R
N
D
0
15
30
45
60
75
Minutes of travel time

Fig. 6.5. Functional economic area on a rectangular road grid: idealized form.

field also contains halves of four D-level centers and quarters of four others. Similarly, although an R-level area is sixteen times as large as an N-level area, only nine N-level areas are wholly contained in the R-level commuting field. The commuting field also includes halves of twelve other N-level areas and fourths of four additional N-level areas.

The point of this demonstration is that we can approximate exhaustive, nonoverlapping sets of trade areas only if we confine ourselves to a single type of trade area. If our basic decision is to divide the United States into commuting fields corresponding with the R-level trade area of Figure 6.5 we cannot also require each commuting field to include an integral number of D-level or N-level trade areas.

If as a practical matter we approximate commuting fields in terms of whole counties, the problem just raised is not very serious. Nearly all county seat towns would qualify as at least N-level shopping centers, and many of them would qualify as D-level centers. So the tendency of whole county approximations would be to throw each D-level trade area primarily into one functional economic area or another.

It should also be clear that in the real world we do not have to worry about the concentration of a large number of D-level and N-level shopping centers precisely on the boundaries of our commuting fields. If we allow realistically for historical accidents and accidents of terrain in the location of towns and shopping centers, this problem is submerged in the empirical one of determining which whole counties should be associated with the central city of a given FEA. Automobile speed and road quality have increased over the years; in all probability there has been a tendency to build stores and shopping centers too small and too close together relative to the standards which came to prevail a decade later.

The underlying hierarchical regularities in Figure 6.5 are defined in terms of minutes of travel time. In the less populous FEA's where automobiles are almost the universal mode of transport, squares delineated in terms of minutes may also approximate squares in terms of miles. The commuting field is the market in which the resident workers sell their labor, receiving in return wage, salary, and professional or proprietary income. This is serious business indeed, accounting for at least 80 percent of personal income payments.

Nonworking members of the household are largely involved with home, school, neighborhood, and neighborhood shopping centers. These activities define areas much smaller than that of the commuting field.

Even in an agricultural region with a rectangular road grid, minutes can be transformed into miles in a variety of ways. The opening of a new east-west interstate highway running through the commuting field of Figure 6.5 would elongate the commuting field in the east-west direction. Some of the N-level centers may be served by relatively poor roads and others by very good ones. These and other plastic distortions, planned or unplanned, can modify the geographical boundaries of a commuting field in an agricultural area.

SUGGESTED APPROACH TO SUBDISTRICTING LARGE METROPOLITAN AREAS

Perloff and Leven suggest that regional accounts should "provide data on totals not only for the entire urban region but for designated districts within the region as well."[3] If our "entire urban region" consists of a commuting field approximated by a cluster of whole counties, we must use criteria other than commuting patterns to delineate "designated districts within the region."

Perhaps 60 percent of the total employment in an FEA as of 1970 will be residentiary. This residentiary employment tends to be concentrated in shopping centers or plazas of (typically) three hierarchical types. For example, the article on "Shopping Centers" in the 1965 edition of the Encyclopaedia Britannica speaks of neighborhood shopping centers, district shopping centers, and regional shopping centers.[4] In large metropolitan areas these three kinds of centers might serve respectively from 15,000 to 30,000 people, from 60,000 to 12,000 people, and from 240,000 to 480,000 or more people (specific figures mine, but close to those in the article cited.)

A regional shopping center in the suburbs of a large metropolis has shopping facilities and professional services equal in most respects to those in the central business district. In functional economic areas with central cities of less than (say) 100,000 population and with total populations of not more than (say) 250,000, the distinctive shopping facilities of the central city will correspond hierarchically to those found in the regional shopping centers of a large metropolis. Thus in the less populous FEA's the commuting field and the R-level trade area of the central city tend to coincide. The equivalents of district shopping centers will be found in a few of the larger towns in the FEA (other than the central city), and there may be one or more district shopping centers in the suburbs of the central city itself. The equivalents of neighborhood shopping centers will be found at several places in the central city and will also appear in the business districts of those towns in the FEA which are large enough, with their surrounding trade area populations, to support one or more food supermarkets.

Thus the less populous FEA's having a single "full line" shopping and service center could be subdivided into trade areas corresponding with those of district shopping centers. Such trade areas would usually center on towns of 5,000 or 10,000 or more population. A still finer subdivision could be based on the trade areas of the neighborhood shopping center class typically centering on towns of 2,000 or 5,000 population.

The largest metropolitan areas include several or many shopping centers of the regional or R-level. The central business district of the metropolis is a coordinating and financial center of national significance to a large region covering one or more states. Rapid transit systems make the central business district accessible with 60 minutes travel to most residents of the metropolitan area who choose to live near the rapid transit lines.

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[3] Perloff and Leven.

[4] Encyclopaedia Britannica, 1965, Vol. 20, pp. 575-76, "Shopping Centre (Shopping Plaza)." The article states that the neighborhood center usually has a supermarket as chief tenant; the district center, a department store (presumably of moderate size); and the regional center, a branch of a large department store. It states further that the regional center, because of its size and large variety of merchandise, is the most important of the three types.

The coordinating and financial activities of the central business district of the metropolis form an important part of the area's export base. A large proportion of the residentiary employment of the metropolis is located in shopping centers of the R-level and smaller. Travel within these R-level areas is largely by surface transportation at very slow rates of speed if we allow for waits at intersections, waits at bus or streetcar stops, time spent finding parking spaces or getting into and out of parking lots, and so on. My conjecture is that a large proportion of the residentiary workers in each R-level trade area reside in that area, and that many of them spend thirty minutes or more negotiating the distance from kitchen to store or office.

The export base of an R-level trade area may be located largely (or, in the limit, entirely) outside the R-level trade area itself. Such an area may earn its way mainly by exporting commuters to the central business district. Where circumferential and/or radial freeways exist, residents of such an area may commute outward toward industrial plants and home offices which, like the central business district, form part of the export base of the metropolis as a whole.

If a large export-oriented establishment is located within an R-level trade area, it is likely that a large number of its employees will also reside in that area. It may also be necessary to "annex" an industrial plant which lies outside the residential area to that R-level trade area from which the plant received the largest number of its workers (i.e., a larger number than from any other R-level trade area). However, it should be kept in mind that the R-level shopping centers near the outskirts of metropolitan areas will draw considerable trade from persons living in the smaller towns and open country lying many miles beyond the industrial belt just hypothesized. Many residents of this outlying portion of the R-level trade area may work in the heavy industrial plants. So circumferential industrial plants may cause no more of a problem than does the fact that farm machinery and meat-packing plants on the outskirts of an FEA central city of 50,000 people may be located two or three miles from its central business district.

We have described a mononuclear FEA as one which contains a single R-level shopping and service center, the trade area of which is coextensive with the FEA's commuting field. Such areas will rarely contain more than 250,000 to 500,000 people. The more populous FEA's will include two or more R-level shopping and service centers; they may perhaps be called "compound FEA's."

Dense population would appear to favor the attainment of economies of size in residentiary establishments. However, dense population also creates diseconomies including urban congestion and air and water pollution. The R-level shopping centers should achieve their maximum economic size in large metropolitan areas. Wholesale establishments and rail and truck terminal and warehouse facilities in a metropolis may be able to achieve large size and associated economies through serving the establishments of several R-level trade areas from a single location.

These points would require empirical demonstration. However, it would appear that the compositions of the residentiary labor forces of different

R-level trade areas in a metropolitan area should be quite similar to one another (apart from differences in income levels in different parts of the metropolis). The compositions of imports for consumption within the various R-level trade areas should also tend to be similar (apart from income level and demographic differences).

The large sizes of contiguous areas occupied by members of particular socio-economic groups in the largest metropolitan areas may lead to much greater differences between R-level trade areas within a metropolis than are encountered in other mononuclear FEA's. If we define areas in terms of minutes of travel time by the dominant mode of transportation, "depressed areas" in regions of sparse population.

In a metropolitan area containing (say) ten R-level trade areas, there would be very large volumes of commuting across the boundaries of the R-level areas. Hence a metropolis with a single rapid transit commuting field might also be regarded as a consolidated urban region, with cross-commuting resulting from the close packing of ten mononuclear FEA's each with a commuting radius of 30 minutes or more in terms of the transportation facilities available for moving around within it. The distinctive establishments of the central business district, over and above those found in R-level shopping and service centers, are a major component of the export base of the "consolidated urban region"; the rapid transit system is also chargeable to the consolidated urban region as a whole.

Industrial plants on the outskirts of the urbanized area can probably be associated with particular R-level trade areas and commuting fields, some of which may extend outward beyond the commuting field of the central business district itself. That part of the transportation system which is helpful in bringing residents to the R-level shopping center and to the major export-base firms within its trade area would be chargeable to the area concerned.

Hence my conjecture is that a major metropolitan area has a compound or multifaceted structure resulting from (or equivalent to) the close packing of what would otherwise be mononuclear FEA's. The rapid transit system permits some residents of several different mononuclear FEA's to commute to the central business district. Radial and circumferential highways permit some residents of the urbanized area to commute outward to industrial plants and home offices located outside the urbanized area. However, I surmise that a large proportion of this kind of outward commuting, primarily by means of private passenger cars, takes place within basically mononuclear FEA's.

I recommend, therefore, the following strategy for area delimitation in a national system of regional accounts:

1. Divide the United States into clusters of contiguous whole counties which approximate the commuting fields of (1) SMSA central counties containing central cities of 50,000 population or more and (2) of central counties containing central cities of less than 50,000 population. Each noncentral county would be assigned to the commuting field of that central county to which it sent the largest number of commuters.

These clusters of whole counties would be referred to as functional economic areas or FEA's.

2. In agricultural regions the commuting fields of functional economic areas with central cities of perhaps 100,000 population or less will tend

to be coextensive with the specialized retail trade and service area of the central city. This gives rise to the notion of a "mononuclear FEA."

In mononuclear FEA's whole counties might prove to be suitable subdistricts for maintaining separate accounts.

3. Functional economic areas of (say) 500,000 population or larger may perhaps be regarded as compounds or clusters of two or more basically mononuclear FEA's. In such cases the dominant establishments in the central business district are important components of the export base of the commuting field. In contrast the central business district of a mononuclear FEA will consist primarily of firms oriented to the needs of area residents.

4. The skyscrapers in the central business districts of the largest metropolitan areas seem to reflect a need, or at least a desire, to bring high-level officials and supporting staffs of many large firms into close proximity. Typically these firms operate in or produce goods for a large number of mononuclear FEA's--often their operations are national in scope. Some insight is gained into the internal structures of the largest metropolitan areas if we think of them as resulting from (or equivalent to) the close packing of a number of basically mononuclear FEA's. The significance of alternative modes of transportation and of commuting outward from the urbanized area to the industrial ring can be partly understood in these terms.

It is suggested that the trade areas of regional shopping centers (R-level centers, in our terminology) would make appropriate subdistricts for disaggregating some elements of the regional accounts for large metropolitan areas.

5. The proposed strategy for delimiting functional economic areas, including those which we have referred to as compound FEA's, is compatible with the existing SMSA system and with the use of whole counties as basic building blocks in our national system of economic and demographic data. Ultimately, perhaps, the county building blocks can be discarded in favor of delineations based on data for smaller areas. However, these opportunities and their associated problems can be perceived more clearly after we have acquired some experience in implementing a national system of regional accounts based on the principles recommended above.

Chapter 7

Program Planning for Economic Development

Martin C. McGuire

One of the lesser explored aspects of economic growth and development has been the interaction between the growth of national economies and that of the constituent subeconomies of which national economies are comprised. Yet this subject promises to be one deserving increasing interest and attention from those concerned with the future of the American economy. This is particularly true for federal or other governmental planners concerned with the distribution of the fruits of economic progress among the people. An examination of the incidence of poverty and unemployment reveals that not only are individuals and families affected but also groups of people geographically compact enough to be called economies. Urban ghettos, impoverished rural farmlands, and technologically by-passed regions are more than collections of distressed individuals; they are distressed economies. For this reason, the existence of prosperous local economies is a valid social and economic objective for government -- though it be an intermediate objective enroute to economic prosperity for all the people.

The mission of the Economic Development Administration is to alleviate economic distress in areas where growth is lagging -- more specifically where family income is low ($2800 or less) or unemployment is high (6% or more). The chronic nature of the depressed areas problem was recognized in the hearings preceding the passage of the Area Redevelopment Act of 1961 and the Public Works and Economic Development Act of 1965 and in the laws themselves. Accordingly, EDA has placed

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great stress on long-range planning and analysis in developing strategy and policies. While the ultimate objective of the EDA program is to assist low-income or unemployed people, the criteria for qualification for assistance apply to geographic areas -- usually counties or groups of counties. Therefore, our planning required that we make projections of area economic characteristics. I am convinced that our findings will be of value not only to EDA but also to many other public and private groups concerned with economic and social programs.

The following is a brief description of the work we have done and a few of our more significant conclusions. The objective of these studies was to estimate, for planning purposes and for the future, the dimensions of area economic distress, and to identify the relevant trends which influence geographical patterns of low income and high unemployment. The primary element in the analysis consists of comparisons of alternative population, labor force and employment projections on a county-by-county basis for the year 1975. These projections result in:

1. Estimates of the pattern and magnitude of area distress for the year 1975, if no federal action is taken specifically to alleviate such distress.

2. Estimates of how these conditions depend upon inherent economic and demographic uncertainties.

Such estimates of economic distress narrow the range of uncertainties and allow us to bracket the costs of eliminating area distress. This in turn will allow us to establish alternative long-range targets for federal action in recognition of the costs involved. It also should provide a basis for making decisions on long-range resource allocation for other domestic programs, which depend upon or influence the economic health of local economies. The projections of economic distress are based on consideration of the following types of data:

1. Number, location, and industrial composition of new jobs that will be added to the American economy by 1975.

2. Alternative migration patterns of people by 1975.

3. Efficiency of the private economy in putting new jobs and people in the same places.

EMPLOYMENT AND POPULATION PROJECTIONS

The distribution of income, employment, and unemployment over the United States depends on four interdependent factors:

1. Level of activity of the total economy over the planning period--in this case, 1966-75.

2. Geographic distribution of the national employment totals by industrial sector.

3. Wage and salary differences among industries and regions.

4. Geographic distribution of population and work force.

We have analyzed these four factors in order to project patterns of local and regional distress in future years. These projections have been made for 3,071 counties (or county equivalents) in the United States.

Since each of the four factors is subject to varying degrees of uncertainty, we developed three alternative projections indicated by Table 7.1 to estimate the effects of different assumptions about the national average unemployment rate. The projections with 4 percent average unemployment are considered the central trend, or the most likely of the three. The 2 percent assumption is optimistic and serves primarily as a benchmark for planning. The 6 percent assumption is pessimistic.

TABLE 7.1

Alternative National Economic Projections *

	1975 Alternative		
Assumed civilian unemployment rate (1964-75)	2%	4%	6%
U.S. resident population (millions)	223.6	223.6	223.6
Gross national product (billions of 1958 dollars)	904	877	855
Per capita personal income (1958 dollars)	3,300	3,200	3,120

*Source: Clopper Almon, Jr., The American Economy to 1975, (Harper and Row, 1966).

The remainder of this presentation assumes the 4 percent national unemployment rate; parallel analyses exist for the cases of 2 percent and 6 percent national unemployment rates.

Regional Shifts in Employment

Figure 7.1 summarizes the projected outcome of trends in growth and location of industry by region,[1] assuming a 4 percent U.S. average unemployment rate throughout the period 1964-75. The regional employment projections presented here were made by Professor Curtis Harris, University of Maryland, formerly of The Economic Development Administration. It is derived from the detailed projections for each of 3,071 counties. The major trends are:

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[1] The five regions defined solely for illustration include states as follows:

I. Northeast: Vt., R.I., Penn., Ohio, N.Y., N.J., N.H., Mich., Me., Mass., Ind., Ill., Conn.
II. Midwest: Wisc., S.Dak., Okla., N.Dak., Neb., Mo., Minn., Kan., Iowa.
III. South: W.Va., Va., Tenn., S.Car., N.Car., Miss., Md., La., Ky., Ga., Fla., D.C., Del., Ark., Ala.
IV. Southwest: Texas, N.M., Calif., Ariz.
V. Northwest: Wyo., Wash., Utah, Oreg., Nev., Mont., Idaho, Hawaii, Colo., Alaska.

1. An overall national increase in employment of 29 percent from 1960 to 1975.
2. A preponderance of employment growth in the South, Southwest and Northwest.

TABLE 7.2

Alternative 1975 Regional Populations
(Millions of People)

	U.S. Total	North: east	Mid-west	South	South: west	North: west
1. No migration population	223.6	93.0	25.2	54.7	37.7	12.8
2. Balanced population (4% unemployment)	223.6	89.3	24.2	57.2	39.3	13.1
3. Prior migration population	223.6	91.2	24.5	54.6	40.0	12.9

Although Figure 7.1 does not show this, the data on which it is based also indicate:

1. A major shift in national employment out of agriculture and mining (a decline of 34 percent) to services, finance, and government (increase of 56 percent).
2. A negligible increase in manufacturing, trade, utilities, and transportation, taken together, in the Northeast manufacturing belt (3 percent) and a small increase in the Midwest (16 percent).
3. A national increase in total personal income of 85 percent.

Geographic Distribution of Population in 1975--Growth and Migration

Table 7.2 shows three alternative 1975 regional population distributions for comparison with the employment projections of Figure 7.1. Like Figure 7.1, it is a summary of similar population data for each county unit in the United States.

The projections start from the actual 1965 population. First is shown the 1975 population that would result if no migration between counties took place from 1966 to 1975, that is, the result of natural population increase. Second is shown the regional population that would result if past migration trends (1950-60) are assumed to continue throughout 1966-75. Third is shown the regional population that allows a 4 percent unemployment rate in each county, given the employment projections shown on Figure 7.1.

COMPARISONS OF POPULATION AND JOB LOCATION

Adjustments Required to Balance Jobs and People in 1975

A comparison of projected employment patterns with various population patterns for the year 1975 led to this conclusion: During the 1966-75 decade, major shifts will occur in population location and in the location of new jobs. The resulting concentrations of low income and high unemployment in specific "local economies" are, to a large extent, a residual of these broader economic movements.

There is, we assume, a natural tendency for unemployment rates to equalize across the country. Thus the amount of unevenness at a particular time may be interpreted as a lag in the adjustment processes of the economy. There are two ways of measuring the size of the adjustment that would be required to balance jobs and people over any period of time -- in this case 1966-1975. One measure is the number of jobs that would have to be moved to people for a given population distribution and national unemployment rate. The second measure is the number of people that would have to move to jobs under the same assumptions, so as to eliminate concentrations of unemployment. A reasonable assumption, and one made in our studies, is that most (75 to 95 percent) of the required adjustment in locating people and jobs together will be achieved by natural growth of the private economy. The area distress problem is a residual of these broad economic movements, and it is that residual with which federal government programs are concerned.

TABLE 7.3

Total Required Economic Adjustment To Insure a Maximum County Unemployment Rate of 6%

Adjustment is Measured from the No-Migration Population Distribution	Adjustments Required when National Average Unemployment Rate is: 2%	4%	6%
		(Millions)	
Population migration required	10.0	12.1	15.1
Labor or job migration required	3.7	4.7	5.6

Table 7.3 shows the total adjustments (in terms of jobs to be located or migration of people) required to insure that by 1975 no county has an unemployment rate greater than 6 percent, assuming a 4 percent national rate. We assumed that most of the adjustment would result from private economic development. The private economy, however, is likely to fail to

close these gaps completely. This would leave some further adjustment to be stimulated by government action.

Table 7.4 shows our best estimates of the size of this residual requiring government action under a variety of assumptions about the ability of the private economy to balance jobs with people. The assumptions are designated as "optimistic," "middle," and "pessimistic." The middle assumption results in a requirement of 0.6 million jobs or 1.6 million migrants.

Locational Patterns of Potential Unemployment and Special Problem of Big Cities

I now turn to one simple but important finding of our analysis. Over the next decade the natural rate of increase of population and labor force in America's biggest cities will be greater than the rate of growth of job opportunities in those cities as estimated by our projections. One basic reason for this is that when all U.S. counties are grouped by 1960 population, most large and small counties have projected employment growth of less than the national average, while medium-sized counties grow faster than the average. Metropolitan and suburban America historically has gained population at the expense of rural areas, yet the central cities within metropolitan areas are expected to have employment growth below the national average.

As a measure of potential tension in job/people location in the large metropolitan areas, we will use the population those areas would have to lose to achieve an unemployment rate of 4 percent when that is the national rate of unemployment. Table 7.5 gives a breakdown of the counties making up the 29 largest metropolitan areas. The table shows that within the central cities of these 29 largest urban complexes labor force growth exceeds projected employment growth such that 3.4 million people would have to migrate from those central cities to reduce the unemployment rate to 4 percent. Employment growth in the suburbs and outer-ring counties in these same 29 metropolitan areas, on the other hand, is expected to be greater than the national population/labor force growth. For the 29 urban complexes as a whole, these two trends almost balance out -- which suggests the importance and potential payoff of improving commuting patterns or of securing open housing compliance. The remaining two columns in the table present a less reassuring picture. Once the fast-growing population centers of California are omitted, the balance between relative suburban growth and relative core-city decline disappears. For the 25 complexes with 1975 populations of over one million, relative central city decline outpaces suburban growth by a net difference of 1.6 million people or about 640 thousand jobs. And three-fourths of this potential distress is concentrated in the eight largest metropolitan areas outside of California.

TABLE 7.4

Residual Concentrations of High Unemployment: 1975
Numbers Unemployed in Excess of 6% in Distressed Areas*

Assumed Pattern of Privately Induced Capital or Labor Migration	Amount of Privately Induced Migration, Assumed to be Achieved by the Private Economy (as a % of Migration which would equalize all county unemployment rates at 4%)		
	80%**	90%	95%
1. Pessimistic	1.3	0.6	0.4
2. Middle	0.6	0.2	0.1
3. Optimistic	0.0	0.0	0.0

** 80% is minimum required migration to eliminate employment rates over 100% employment in any single county.

* Assuming a national average unemployment rate of 4%.

TABLE 7.5

Urban Complexes over 1 Million
1966-75 Migration Required to Balance People with Jobs*

		Excluding California	
	29 Largest Complexes	25 Largest Complexes	8 Largest Complexes
1975 no-migration population	96.6	79.8	48.0
Total net migration 1966-75 "required" to attain a 4% unemployment rate in each complex	-0.1	-1.6	-1.2
Central cities	-3.4	-2.8	-1.7
Associated suburbs	+1.7	+0.8	+0.3
Contiguous outer-ring counties	+1.6	+0.4	+0.2
Total "required" migration as percent of population	-0.1%	-2.1%	-2.5%

Plus signs (+) indicate in-migration
Minus signs (-) indicate out-migration

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*Assuming a 4% national average unemployment rate.

An intuitive explanation for the trends shown may be summarized as follows:

1. During the decade 1950-60, the large urban/suburban areas received substantial numbers of migrants.
2. With the large 1960 populations resulting in these areas, the natural rate of population increase produces still larger numbers of additional people in 1975.
3. New industry, however, is not locating in these places at a rate sufficiently high to employ the resulting labor force.

CONCLUSIONS

1. Our analysis indicates that problems of high unemployment over the next decade may arise increasingly in the largest cities and their associated urban/suburban complexes.

2. Concentrated unemployment results from mismatching of normal population migration and private industrial location decisions. Much depends on whether people move to where the new jobs develop, and vice versa. Studies are needed to investigate the extent to which the federal government should take account of existing migration patterns or industry locations patterns in its programs to eliminate high concentrations of unemployment in particular places.

3. This analysis has been based largely on detailed projections of employment and population. Our experience indicates the value of such projections to all federal agencies that deal with domestic programs. Annually updated and improved projections of this type could provide a common frame of reference and a tool for planning and programming useful for all federal economic and social programs. Our experience also indicates the potential value of economic projections as a tool for coordinating plans and programs among various federal agencies and at different levels of government.

4. One effect of a more even geographic distribution of total national prosperity would be the possibility of a lower national average unemployment rate.

5. Our studies also suggest that by 1975, the present low-income standards defining poverty (for an area) will be obsolete. Virtually no counties will exist with a 1975 median family real income of less than $2,250 (1958 dollars). By 1975 standards, however, disparities in 1975 median family income between rich and poor counties may be slightly greater than the difference today.

Chapter 8

Mission and Operation of Area Vocational Schools and Community Colleges

Trevor G. Howe

Historically, Iowa's junior colleges could be considered as the forerunners of area schools. Public two-year colleges in Iowa are almost 50 years old, the first one being established at Mason City in 1918. The junior college movement reached a peak in 1927 when nine were added. They were restricted in growth however, because of their attachment to and sole support from local school districts. During the depression years several were forced to close; only 16 survived.

In 1962, the Iowa State Department of Public Instruction conducted a study and published its findings in a publication entitled, "Education Beyond High School Age: The Community College." This study was financed by a legislative grant of $25,000 from the 59th General Assembly, but it received no legislative action for two years.

The Area School Act, Senate File 550, passed by the 61st Iowa General Assembly, became law on July 4, 1965. This act provided for the establishment and operation of area vocational schools and area community colleges. The rapid progress and statewide implementation of this permissive legislation is clear evidence of the local support and recognition of the need for greatly expanded occupational and educational opportunities for all Iowans.

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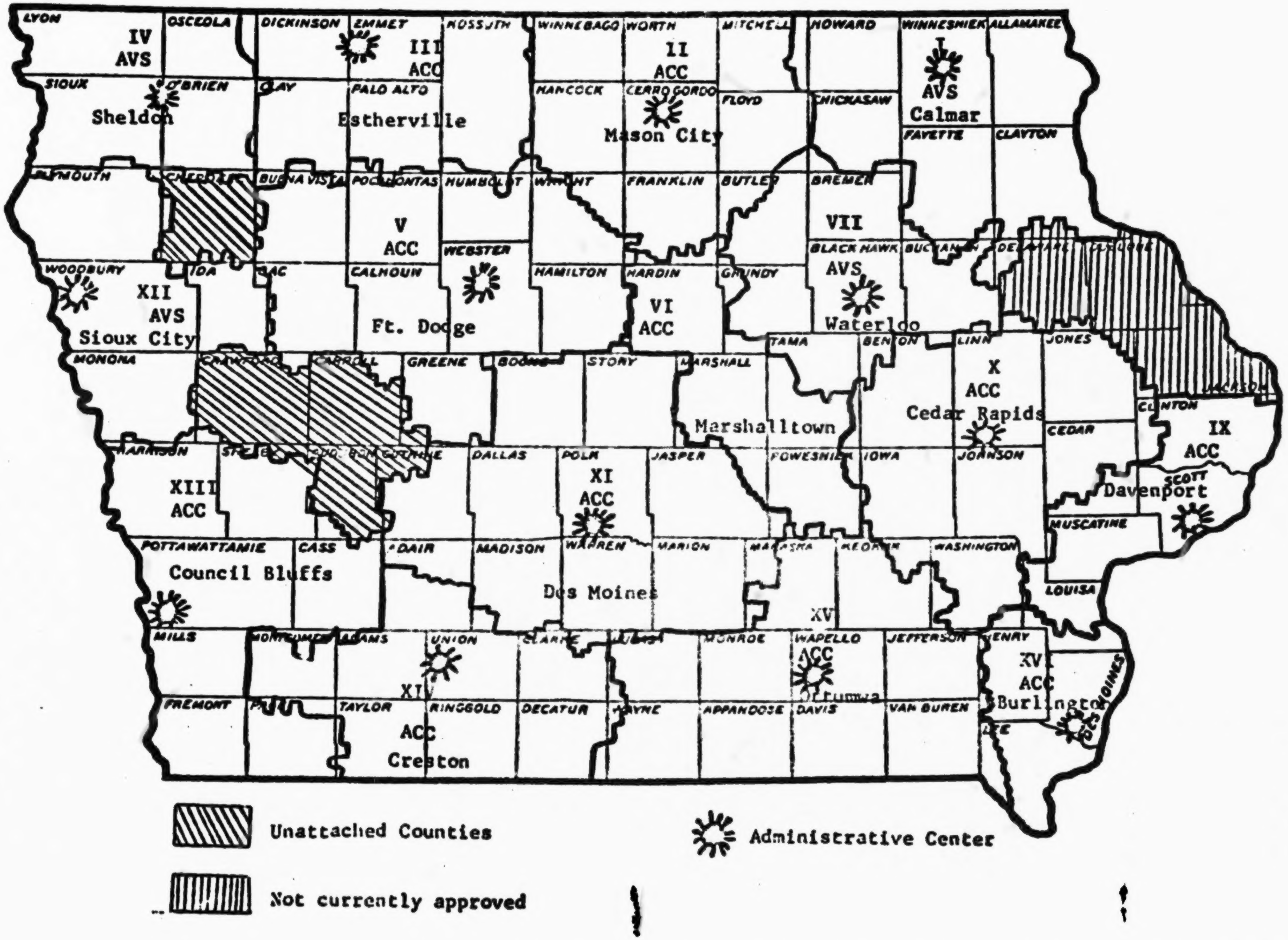
Fig. 8.1. Administrative centers and merged areas for

Area Community Colleges (ACC) and Area Vocational Schools (AVS).


LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
IV AVS
III ACC
II ACC
I AVS
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
Sheldon
Estherville
Mason City
Calmar
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
V ACC
VII
WEBSTER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
HAMILTON
HARDIN
GRUNDY
XII AVS
VI ACC
AVS
Sioux City
Ft. Dodge
Waterloo
TAMA
BENTON
LINN
JONES
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
X ACC
JACKSON
Marshalltown
Cedar Rapids
CLINTON
IX ACC
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
XIII ACC
XI ACC
SCOTT
Davenport
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
Council Bluffs
Des Moines
LOUISA
XV
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
ACC
XVI ACC
XIV
Ottumwa
Burlington
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
DES MOINES
ACC
Creston
Unattached Counties
Not currently approved
Administrative Center

PLANNING PHASE

First-year activities were limited to various phases of planning. The act provided the necessary legal framework for two or more counties to plan the merger of the county school systems to develop either an area vocational school or an area community college. The county boards of education, designated as the planning boards, were responsible for the development of the merged area proposal. All requirements and necessary legal steps as outlined in the Area School Act were followed.

To date, the proposals of 15 merged areas have been approved by the State Board of Public Instruction for the operation of area community colleges and area vocational schools (see Fig. 8.1). Four merged areas were approved as area vocational schools. Eleven merged areas were approved as area community colleges offering vocational-technical curricula and the first two years of collegiate studies.

The proposal for Area VIII (Delaware, Dubuque, and Jackson counties) is in the process of meeting the requirements for the approval of the State Board. Only four counties--Cherokee, Crawford, Carroll, and Audubon--remain uncommitted to any merged area.

Area Proposals

The Area School Act specified that the information required in all proposed plans for merged areas be submitted to the State Board. Briefly, this included a description of the geographical limits, projections of population data in school enrollments, educational offerings and needs, proposed curricula, and assessed valuations, as well as an evaluation of local interest and an outline of director districts of approximately equal population. Each elected director represents a district on the area board of directors.

After State Board approval, each of the county planning boards was notified. This approval officially designated and classified the area school, described all territory, and indicated the site location and boundaries. Each county board of education then published a notice of intent to form the proposed merged area. Within a 70-day period, each planning board formally accepted or rejected the merged plan.

ORGANIZATIONAL PHASE

Once organized, the new boards became recognized school corporations. Fifteen area schools have now hired their chief administrators.

One of the new superintendent's first tasks was the preparation of an annual budget, designating the proposed expenditures and the amounts to be raised by local taxation. Other tasks included the development of the initial educational program and the hiring of key staff. Many of the former junior college deans and former directors of vocational education have been employed in the same capacities in the new merged area schools. Additional staffing will be difficult as instructors for the new programs are in extremely short supply. To help alleviate this critical shortage, procedures have been developed for the certification of experienced individuals presently employed in industry who possess the qualifications and have an interest in teaching.

Plans to integrate post-high school vocational and technical programs and public junior college programs within each merged area must be carried out as decided by the new board. Post-high school vocational and technical programs have been in existence on a limited basis for several years. However, these programs were offered primarily under the administration of public schools in the major cities in the state. With the exception of the Technical Institute of Iowa State University, the programs are being assumed by the new area schools. Additional curriculum offerings to meet the areas' needs will be considered in the long-range plans.

Educational Opportunities and Services

The specific purpose of the merged area community colleges and vocational schools is to provide all Iowans a new dimension in educational opportunities and services. These intermediate opportunities will complement and supplement the educational programs of the present secondary schools and four-year colleges. The new area schools will provide:

1. The first two years of college work, including pre-professional education.
2. Vocational and technical training.
3. Programs for in-service training and retraining of workers.
4. Programs for high school completion of students of post-high school age.
5. Programs for all students of high school age who may best serve themselves by enrolling for vocational and technical training while also enrolled in a local high school, public or private.
6. Student personnel services.
7. A center for community activities and services.
8. Vocational education for persons who have academic, socioeconomic, and other handicaps which prevent their success in regular vocational educational programs.
9. Training, retraining, and all necessary preparation for productive employment of all citizens.

Guidelines and Standards

To assist the local boards in required organization detail, the Department of Public Instruction prepared guidelines. These included information relating to sites, facilities, administration, personnel certification, curricula, educational achievement requirements, instruction, instructional materials, counseling and guidance, library, and maintenance.

The State Board of Public Instruction was designated to establish the approval standards and to inspect annually for approval the offerings of all area vocational schools which apply for federal and state funds. Approval standards for area community and public junior colleges were adopted jointly by the State Board of Public Instruction and the State Board of Regents. Criteria set forth in the standards will provide a basis for evaluating the programs of the area community colleges and vocational schools.

Curriculum Development

The Area School Act of Iowa made possible the establishment of educational programs to meet the needs of individuals in their own communities. A broad range of programs or curricula will have to be developed.

The best thinking of many resource persons must be drawn upon in the development of appropriate educational programs. Community advisory committees representing business, industry, labor, and local training resources will be called upon to assist in determining the need for and appropriate content of curricula. Researchers will be called upon to document current and future employment needs and occupational trends to serve as a basis upon which to establish or terminate specific occupationally oriented programs.

Persons of all ages must have opportunities to obtain training suited to their needs, interests, and abilities. Basic educational opportunities for adults at the elementary and secondary levels will be needed. Vocational and technical education is needed to provide job entry skills for many high school students. Similar opportunities will be provided for those who have completed or discontinued their formal education and are preparing to enter the labor force.

Educational programs will be developed to meet the needs of employed workers who want to upgrade old skills or to learn new skills. The handicapped person needs to have suitable educational opportunities.

Two-year college-transfer curricula will be provided for the college-bound students. The majority of curriculum offerings, however, will be occupationally oriented at the post-high school level.

FINANCING

Federal, state, and local funds as well as student tuition will be used to finance area schools. The law provides that three-fourths of one mill may be levied for operating costs. An additional three-fourths of one mill may be levied for capital improvements if approved by 50 percent of the voters. Each area also has the same bonding provisions as allocated to local school districts. The schools may accept gifts of funds from private sources.

The 1965 legislature appropriated $10 million to assist in the development of at least four area schools. Six million dollars is available for area school construction to be used before 1969. The remaining $4 million was appropriated for the biennium 1966-67 for present vocational programs and the development of new programs and area schools. This figure represents an increase of approximately $1.7 million each year above the previous legislative appropriation for vocational education.

General school-aid funds will be allocated by the state to each merged area operating an area vocational school or area community college. The amount will be determined from multiplying $2.25 by the average daily enrollment of students who are in attendance and carrying 12 or more semester-hours of work. The number of full-time equivalent students carrying fewer than 12 hours will also be computed for the purpose of determining state aid.

Tuition will be charged for instruction at a rate to be approved by the State Board.

Additional money is available under provisions of the Vocational Education Act of 1963. However, there are requirements for matching these funds by either local or state funds.

IMPLICATIONS FOR MANPOWER DEVELOPMENT

All levels of education, and particularly post-secondary education, must quickly move to assume greater responsibilities for preparing men and women for entry into the changing world of work resulting from technological change.

Iowa's answer to this challenge partially resides in the statewide system of post-secondary educational institutions now being organized. Several factors reflect the need for and the potential benefits of the educational opportunities and alternatives which can be provided through these post-secondary institutions.

Economic Growth

In the last decade, a total of 1,335 industrial developments (expansions, branches, and new industries) have been reported to the Iowa Development Commission--861 of them in the past five years. These developments have created 50,540 jobs in the past ten years. Continued industrial growth will supply new job opportunities in manufacturing for which trained people will be needed. Maintaining a strong and productive agriculture will continue to require new knowledge, improved and more complex machinery, and a wide range of other supporting services and industries. All of these will employ skilled persons.

Changing Labor Market

New industries and industrial expansions will introduce new machines and techniques. Workers will need to "keep up to date," to develop new skills, and to retrain for new jobs. Women are entering the labor force in increased numbers. The decreasing number of jobs in the unskilled and semiskilled areas makes it more difficult for the young person to enter the labor force. The unemployment rate for the 17-to-24-year age group is about three times that of the adult labor force.

Employer Needs

Competition in the business world forces employers to seek specific skill levels in the personnel they hire. Almost all employers are raising the formal education requirements of new employees to a minimum of a high school education. There is a continuing migration of people from rural areas into the labor force. While these persons bring with them certain skills and work attributes, their needs for satisfactory employment and employers' needs for trained people can be enhanced by specific skill training.

Individual Needs

The educational level of Iowans reflects the potential need for occupational training. Seventy-five to 80 percent of the eligible students in Iowa drop out of school prior to the time they would become college juniors had they continued their education. For example, at the time of the 1960 census only 20 percent of the 27,101 twenty-three-year-olds not enrolled in school had completed one or more years of college. Only 7 percent had completed four or more years of college.

Analysis of the 1960 census also revealed that 33 percent of the 25-to-39-year age group had not graduated from high school. At the same time, 74 percent of the 21,347 nineteen-year-olds who had graduated from high school were not currently enrolled in school.

Assuming that similar figures exist now, large numbers of Iowans are entering their productive years and could benefit from the wide range of occupational training programs which can be offered in the post-secondary institutions. Iowa youths are already seeking post-secondary educational opportunities, as evidenced by the 41 percent increase in enrollment in Iowa's public community and junior colleges--from 5,999 in 1964-65 to 8,468 in 1965-66.

Many Iowa adults are in need of basic education and job orientation so they will be motivated to return to school and enroll in occupational training programs. Adult education opportunities are needed, especially in areas of high migration. An adequate program of vocational and technical education can be important in stabilizing the population of an area.

Economic growth, the changing labor market, and employer and individual needs all suggest the tremendous implications which the area community colleges and vocational schools have for manpower development. Concurrently, the educational needs of thousands of Iowans seeking an occupational niche, which will be their single most status-conferring role in today's job-oriented society, can be met.

The attainment of the potential suggested above will require substantial amounts of information for the planning and justification of occupational training programs. Counseling and guidance personnel will need occupational information useful in helping prospective students match their interests and abilities with job and career opportunities. Educators will need specific occupational statistics for planning purposes. The number of current and anticipated job openings in specific occupations will be needed to give direction to the kind of programs offered. The replacement needs and the number of employees in specific occupations will help determine the number of students to be attracted and trained. Information about the upgrading and retraining needs of workers will aid employees to advance. Information about training programs for specific occupations within the various industries will avoid duplication of effort.

All this information should be collected on a periodic basis so that occupational trends can be determined and programs phased in or out as necessary. To provide locational direction in planning programs, the information will be most useful if collected statewide on a merged area basis.

Education and industry must work together in the planning, development, and evaluation of occupational training programs. This alliance must develop educational alternatives that will give Iowans the opportunity to train for satisfying, gainful employment and to supply skilled manpower for the growing Iowa economy. The goal is to blend the basic ingredients of man, education, and work--to effectively interrelate manpower, occupational education, and economic growth. The area community colleges and area vocational schools now being organized are an important new means of attaining this goal.

Chapter 9

The Role of State Research Coordinating Units

Kenneth Wold

The state research program through the Research Coordinating Unit was inaugurated in 1965. At that time there was a large question as to just what these units ought to be doing. This has been an evolving program which has grown as we have moved ahead to the point at which we find ourselves now.

The Research Coordinating Units have been funded with federal monies which are provided from the appropriations established under section 4(c) of the Vocational Education Act of 1963 and matching funds from appropriations at the state level. At this time support for this program is administered through the Division of Adult and Vocational Research at the national level and will gradually be reduced as the state assumes its responsibility, so it is possible that the federal monies might go down to zero and the states will assume full responsibility. From the outset one aim has been to encourage states to establish units or activities of this kind on a more formal basis. A reorganization of the research staff in Washington, D.C., is in process at the present time, so titles and responsibilities may be changing at this moment. Currently the Research Coordinating Units have been established in 44 of the 50 states; approximately one-half of the units are in schools of higher education and the rest are in state departments. Those states which at this time do not have a

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funded Research Coordinating Unit under this Act are Alaska, Maine, Maryland, South Dakota, Vermont, and Virginia.

The units have a direct tie-in with the Education Research Information Center, better known as ERIC, in that any research projects which come out of our unit in Iowa or any of the other states are sent to ERIC for examination and dissemination to interested agencies and individuals.

Primary emphasis relative to Research Coordinating Units at the national level as presented by Dr. John Bean (former Project Officer, Educational Resources Development Branch, DAVR, U.S. Office of Education) is as follows:

1. Opportunity to get results of research applied at the local level.
2. To develop a research consciousness and mindfulness within each state in an effort to get people to thinking in terms of research.
3. To stimulate research within each state, not only to get them to thinking about it but also to doing something about it--action.
4. To coordinate local research and demonstration efforts in vocational education.
5. To provide consultative assistance to individuals who wish to prepare research proposals in the field of vocational education and to provide some assistance to those people who may be interested in doing research projects.
6. To assist others to find sources of funds for research and demonstration projects.

The Iowa Research Coordinating Unit is located in the State Department of Public Instruction. The unit serves in a staff as opposed to a line capacity in the Vocational Education Branch. In other words, we are not a part of the line organization such as the section chiefs who are concerned specifically with the supervision and coordination of agricultural education, trade and industrial education, home economic education, and so forth; we are a service function to this line organization.

Our unit funding began as of June 1, 1965. Iowa was the first state to negotiate a contract with the federal government for a Research Coordinating Unit.

In regard to the organizational structure of the Iowa Research Coordinating Unit, the associate superintendent of vocational education is responsible to an assistant superintendent who in turn is responsible to Mr. Paul F. Johnston, Superintendent of Public Instruction in Iowa. An associate superintendent for vocational education heads up the Vocational Education Branch, and under him there is the state director for vocational education. Our state director is Mr. Windol Wyatt. The Research Coordinating Unit director is responsible to the state director for vocational education. A State Research Committee and several part-time consultants work with the unit when advice and suggestions are needed. One of the consultants at the present time is Dr. Trevor Howe who is working with the unit on a part-time basis; he and six others are members of our State Committee of Research, Demonstration, and Experimental Programs. These individuals are from the three state institutions of higher education and the State Department of Public Instruction.

Under the director of the Research Coordinating Unit is an agency research coordinator; this person is responsible for meeting with individuals in industry, agriculture, business, and various institutions to orient them to Research Coordinating Units activities. We have an assistant for review of publications whose responsibilities are to prepare materials for examination, to care for our research library and files, and to collect and disseminate materials.

We have a close relationship with each of the public institutions of higher education. Individuals who are working very closely with our unit at this time are Mr. Lowell Carver, Research Coordinator from Iowa State University; Dr. Don R. Sheriff, Research Coordinator from University of Iowa; and Dr. Lloyd V. Douglas, Research Coordinator from the University of Northern Iowa.

The specific objectives for our Research Coordinating Unit are:

1. To collect and disseminate information on employment opportunities, human resources, and educational programs.
2. To stimulate and encourage research on employment opportunities, human resources, and educational programs.
3. To identify issues and problems which require study through research.
4. To establish and maintain working relationships with agencies, institutions, and organizations which are concerned with employment, human resources, and education.
5. To provide support for line personnel in the Vocational Education branch.
6. To assist in the planning and development of secondary and post-secondary educational programs, facilities, and staff.
7. To assist in the development of a statewide computer-based system of vocational-technical education information.
8. To assist in the evaluation of vocational and technical education programs.
9. To promote vocational and technical education.
10. To coordinate activities and exchange information with selected states.

In looking at our work from a slightly different frame of reference, a substantial portion of the time of the Research Coordinating Unit staff has been devoted to projects related to planning for the development of area school organization, staffing, programs, and facilities. Even though we have been engrossed primarily with area school activities, we have not forgotten high school activities. Some of the things we have accomplished are enumerated in our final report which was submitted to Washington at the end of our funded period on November 30, 1966.

As I have indicated, we have been attempting to ascertain manpower and training needs. In addition, we have been trying to gather and analyze other statistics and to organize them in a meaningful way for dissemination to individuals who need them at the state and local levels. The Research Coordinating Unit has obtained from the Iowa Employment Security Commission a listing of firms in Iowa which have four or more employees. The list is presently composed of approximately 29,000 firms, and it will be used when conducting manpower needs surveys. We also have made recommendations and served as consultants to agencies and schools on survey techniques and survey instruments.

Graduate students are doing research work on a limited number of occupations. For instance, one individual is doing a manpower survey on the needs for aircraft mechanics; another is doing a manpower survey on the needs for electronic technicians; one survey has been concerned with architectural drafting. We have had an opportunity as an Research Coordinating Unit to work with these individuals by assisting them in setting up their studies and discussing certain facets with them. Some of the surveys which have been limited in terms of just one or two occupations have been done on a statewide basis. The survey of architectural drafting has been conducted in cooperation with the Iowa Chapter of the American Institute of Architects. We try to cooperate with the various associations whenever possible, but we are limited by the number of associations representing these occupational areas. A survey is being conducted to ascertain the need for boat and motor repair services personnel. A survey pertaining to the need for automotive personnel is being conducted with the automobile dealers and the independent garage owners in the state. The Iowa Employment Security Commission did a fine job in working with us in the preparation of necessary background information on construction workers. A study of personnel in metal fabrication occupations is in process. Efforts are being made to ascertain the need for training in the area of musical instrument repair.

Another of our areas of activity is curriculum development in which we have attempted to collect disseminate outlines and related materials relative to curriculum. Dr. Howe and I have been called upon to talk with individuals about portions of curriculums. We are often asked for information on curriculums that have already been developed which might provide some insight on work being undertaken in Iowa schools. These are the kinds of things we try to make available upon request.

The Research Coordinating Unit has worked on the development of evaluation techniques and instruments; however, I feel that we have just scratched the surface of this subject. We have attempted to collect self-evaluation instruments for the things that are ahead of us in the area schools. The work was done by personnel in our department who have worked with individuals in the Ottumwa schools. Recently I was asked to work with a committee which visited four of the post-secondary institutions in Iowa to ascertain their progress and to get some information as to just where they are, with the thought that this could be used as a base point against which to evaluate the institution at a later date.

We have worked with members of the Department of Public Instruction on the preparation of guidelines and standards which were discussed by members of our department with each area school superintendent and area board at the time the board was organized. This was a set of standards to help them to better understand the law and how they fit in. Secondly, we have assisted in the preparation of facility guidelines which have been developed by the individual who is handling facilities approval and coordination activities in the Department of Public Instruction. We are involved in getting information together on area community college and area vocational school standards.

We are now in the process of preparing and gathering abstracts of research completed in Iowa relative to occupational education from a number of years back to the present time. We feel this is a worthwhile project because it will provide individuals and other agencies with background information for research they may want to do. We are trying to obtain abstracts of 4(a) funded studies so that we will have them for dissemination to various individuals and agencies in Iowa and also have copies available on a loan basis to agencies outside the state.

We are compiling lists of priority research topics with the aim of encouraging graduate students or other persons interested in this kind of research to undertake these projects. We feel that we can all profit by having such a listing available. We will offer our services to aid in a consulting capacity as these research projects are undertaken. We are not conducting research as such, but we are providing assistance to individuals both in terms of funding and consultation.

The Vocational Education branch is responsible for submitting to Washington a Projected Plan of Activities for the next fiscal year, and we have been involved in the preparation of this.

There has been a problem in maintaining current accurate records of enrollments and contact hours; however, hopefully, we are reaching a point where we will have this information through a data processing system.

The preparation of brochures, reports, and articles concerning vocational education is a big part of our activity. With regard to the dissemination of materials, it is of little value to have a piece of research that is so scholarly no one understands it; we have made every effort to keep this material as practical as possible so that it is not shelved without being used.

We are required to prepare and submit to Washington a quarterly progress report on our activities. We keep a daily log of things we do, and we put this information into our report. At the end of each funded period we compile a final report.

We have compiled a bibliography of research studies in occupational education that have been completed in Iowa in order to make this material available to anyone who is interested in conducting research in similar areas. Phi Delta Kappa has a series of publications which we have tried to keep abreast of and purchase. Recently we have made contact with a clearinghouse for junior college information at the University of California, so we are now on their mailing list to receive materials. We also exchange information with other Research Coordinating Units by exchanging copies of our reports.

With regard to resources used for research and development activities, the monies being used for research are local, state, and federal. The activities going on through our unit at the moment are mostly 4(a) activities, although there are some 4(c) activities in the state. Personnel involved in research and development activities are the Research Coordinating Unit staff, state staff of the Department of Public Instruction, local schools (especially area community colleges and area vocational schools) and public institutions such as Iowa State University, the University of Iowa, and the University of Northern Iowa. In the graduate institutions we are interested in working with staff members, graduate assistants, and graduate students.

Examples of public agencies with which we have had contact are the Iowa Employment Security Commission, the Iowa Manpower Development Council, and the Iowa Development Commission. There are many others, but these are perhaps those with which we have worked most closely thus far. Some of the associations to which I have made reference are the Iowa Chapter of the American Institute of Architects, Iowa Automobile Dealers Association, Iowa Retail Lumbermen's Association, Master Builders of Iowa, Independent Garage Owners of Iowa, Central Fabricators, and the Iowa Music Dealers Association. We will want to extend this list, but these are samples of the kinds of groups we have worked with thus far.

What about the impact of the research and development effort on vocational and technical education development in Iowa? The Iowa Research Coordinating Unit staff has developed a cooperative working relationship with the Vocational Education branch personnel. Our first point of emphasis was that of developing a relationship, and we have accomplished this within the framework of two specific functions--research and staff support. In other words we have attempted to provide these people with background material from research studies. Our effort was to start with these people where they were, not to impose upon them the idea that this is the way they should operate or that this is the way research ought be be done. Based on reactions we obtained for our first funded period final report, we apparently have had some success, for these people have turned to us for information of a research nature. So rather than having a "what ought to be," we have gone to an evolving process of awareness, identification, and decision-making concerning research action. The greatest amount of time and effort spent in the unit has been in support of our line personnel, and these individuals have been quite responsive in terms of trying to identify problems. Compared to a year and a half ago, it is much easier to go to them now and talk to them about identifying the research problems.

Basic foundations have been laid for continued cooperation with the state universities, business and industrial establishments and various associations--foundations which had not been formed previously. We apparently have been accepted as a group to perform this service and to provide this information. It has been a cooperative effort on the part of many people.

We do have some problems. There is need to make the Research Coordinating Unit and its functions better known to a wider audience in the state of Iowa and elsewhere. There is a need to devote more time and effort to point out, to motivate, and to coordinate practical types of research currently needed. We have merely scratched the surface, but we are moving in a positive direction, and we must do it within and between various industrial and business establishments as well as the agencies and associations concerned or closely related. There is also need for a better understanding of what local school, state department of education, and higher education personnel can contribute and what functions they can most effectively perform in a constructive research program in vocational and technical education in Iowa. Thus it is necessary to bring groups together, working toward getting each of these groups to fall into a pattern for the betterment of the state. Based on past involvement, it appears that we will be involved more and more with planning and development activities in the state. We are getting more engrossed in this work; it is becoming a reality in terms of discussions and assignments, and we welcome this. This appears to be the ultimate objective of those people who originally were instrumental in getting these Research Coordinating Units under way. If we can accomplish just some of these things, we will have made progress in the right direction.

III. Psychological Research

Dr. Edwin Henry's paper deals with the loss of potential management talent by business firms due to the lack of challenge on the entry job. In order to ameliorate this problem, some managements have tried to develop a means for identifying high potential new employees early so that they can be groomed for management as soon as possible and not kept on unchallenging jobs too long. This approach in manpower research is also very important in the case of the culturally disadvantaged and minority groups.

The second paper in this section discusses factors determining occupational entry within the individual which propel him into one or another career. Dr. Donald Zytowski examines five points of view around which psychologists have organized their efforts to analyze the personological determinants of work-force distribution. While none of them has been shown to be especially valid, the psychologist is unwilling to assume that personal factors have no role in the theory of labor distribution.

Dr. Thomas Lyons discusses those aspects of organizational theory that have direct implications for manpower withdrawal. Dr. Lyons' paper draws upon over thirty-five publications from the psychology, sociology, management and economics sciences. He concludes that there is a need for further research on the individual, organizational, and organization-individual interaction levels.

The fourth paper in this part of the book is written by Dr. Aaron Lowin and concerns the arguments for and against the experimental method in organizational behavior. The paper stresses that the experimental and observational approaches differ by degree rather than by kind, and that the problem of utilizing experimental data for some other end can be treated as one instance of extrapolating from any setting to some other.

Chapter 10

Psychological Theory & Manpower Research

Edwin Henry

Each year organizations in business, industry, government, education and the nonprofit sectors employ the thousands of new college graduates, usually with the hope that most of them will be employed for a long career. But several studies have shown that tenure with the first employer is getting shorter and shorter. For example, a company engaged in research and engineering and therefore employing mostly technical and scientific personnel has found that 55 percent of each year's hires have terminated voluntarily within five years. A substantial plurality of these voluntary leavers were rated by their supervisors as high-quality men who showed a lot of promise, many of them being good prospects for high-level management jobs in due time.

Several companies, including the one above, have investigated the "causes" of this attrition. A prominent cause in all studies has been "lack of challenge on the entry job." This is another way of saying that the organization has not planned adequately for the kinds of supervision, training, work assignments, learning experiences, and careers which are compatable with the abilities, training, ambitions, and career expectations of the men. The typical organization seems to operate on the premise that all men are not only equal but identical. The basic theories of individual differences are ignored.

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A complaint commonly expressed by top-level organizational managements is the shortage of personnel who by reason of talent and development (training and experience) are available for promotion to high-level management responsibilities. Corollary complaints are that development is too slow, by the time a man is ready he is too old, he has too short a career left before retirement, and others.

Organizations have been operating on an emergence theory. Hire a lot of new personnel each year and some of them (enough to meet the organization's needs) will emerge from the herd in due time--ready, willing, and able to succeed to top management. But with organizational expansion and diversification at their current pace emergence is not filling the need.

A few business organizations have taken advantage of psychological theory and technology to ameliorate if not to solve these problems. "All men are not created equal." They differ tremendously in every dimension for which reasonable sanitary (reliable) measuring tools have been developed. Differences in height and weight are obvious, as are differences in hair color, eye color, and skin color. Differences in mental ability, temperament, motivation, tolerance for stress or ambiguity, stability, and mental efficiency are not so obvious. In fact these latter dimensions are discernible to an observer only after prolonged exposure if at all. But the very fact that we have such terms in our language implies that there are individual differences in them. If all men were equal we could not perceive the named dimension and hence it would not exist.

The oft-raised arguments about the origin of individual differences between nature-nurture, heredity-environment, original-acquired, etc. are irrelevant for our interests at this time. The mere fact that widespread differences do exist among the population for which manpower planning must be done is the controlling factor.

The needs for conserving new hires and meeting needs for management talent are really only two facets of the same problem. Solving either one could contribute significantly to solution of the other. The general plan of attack has been much the same but each organizational program has unique features. Standard Oil Co. (N.Y.), AT & T, IBM, Sears and some others are examples.

The typical approach involves steps as follows:

1. A reasonably selective recruiting and hiring program for filling starting-level jobs, e.g., sales, engineering, accounting and finance, research and development, economics, personnel, etc.

2. Early in his career each new hire is tested, assessed, appraised, studied to get a maximally valid estimate of his optimal career pattern and his potential for advancement. In at least one company "early" means during the first week of employment.

3. Determinations of the dimensions or characteristics of individuals to be considered in the appraisal process, development of the instruments to be used for measurement, and the optimal combinations and weighting of the measured characteristics can be done only by appropriate research studies. Such studies are concerned with answering the questions "Which characterisitcs on which people differ are relevant to a successful and satisfying career in occupations within each organization?" "What amount of each relevant characteristic is necessary (optimal) for success in the occupation?" Some minimum

height seems to be necessary for a successful career as a basketball player as the game is played today, but I know of no occupation for which a particular skin color is relevant.

4. Some organizational entity (Personnel Development Committee, Executive Development Coordinator, and others) is charged with monitoring each employee's progress toward the goals established in 2. above. These entities do not replace a man's immediate supervisor in the appraisal of job performance and recommendations of job performance and recommendations for promotions, but they may make suggestions for training experiences, rotational job assignments for development purposes, changes of jobs to provide for a different supervisor to appraise job performance and potential, and new job assignments which will challenge and "stretch" the abilities of each man.

5. Many research studies have noted the unreliability of individual supervisory appraisals of job performance and potential. Progressive organizations therefore make provision for maximum visibility of promising young employees so that many appraisals are possible by supervisors, peers, and in some cases subordinates.

The goals of all these "programs" are much the same; to get an early "fix" on the occupational areas most likely to provide the best outlet for the talents of each new hire, to provide jobs and job experiences to challenge each new hire, to force the emergence of high-level talent in whatever occupational area it occurs, especially for high-level management.

Perhaps the first and most widely known program of the kind described above is that of the Standard Oil Company (N.Y.). An empirical research study was conducted over several years in an attempt to answer the question "What information (data) about an individual which we have at the time of employment, or could get soon after employment, would tell us about his potential for top management jobs as early as possible in his career?"[1]

The EIMP research study resulted in a short (time) series of tests and questionnaires which can be administered to a new employee to determine the probability of his attainment of top management job and his relative success (performance) when he gets there.

A second example of the need for recognition and acceptance of the fact of individual differences, the development of tools and techniques for measuring them, the determination of proper combinations and weighting of relevant characteristics to reveal optimal careers and developmental planning to achieve them is the currently important case of the culturally disadvantaged and minority groups.

Irrelevant discrimination against such persons is no longer to be tolerated. But failure in the past to develop instruments appropriate for the measurement of relevant characteristics among the illiterate, the slow learner, the relatively uneducated, and persons with different cultural backgrounds has contributed to the current crisis in employment and development of such people. Many psychologists are frantically working to catch up before it is too late.

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[1] A report - EIMP (Early Identification of Management Potential) is available from the Employee Relations Dept., Standard Oil Co. (N.Y.), 30 Rochefeller Plaza, New York, N.Y. 10020. A condensed report based on EIMP was published in The Conference Board Record a few years ago. Similar research studies and operational programs have been developed for other occupational groups, i.e., Salesmen, Service Station Dealers, etc.

The mere fact that appropriate instruments are not now commonly used is no reason to abandon sound procedures for dealing with the problem. Oil companies in particular have had much experience with developing and using appropriate relevant tests and other procedures because of their operations in other countries, cultures, languages, value systems, and with relatively less educated and frequently functionally illiterate populations. It has been said that oil seems rarely to be found in well developed, urban, sophisticated areas where education, attitudes, motivations, ambitions, values, work habits, etc. are "like our own." Yet generally speaking oil companies have developed the know-how to appraise, develop, and assign indigenous people in occupations and organizations where they are successful.

The key to good manpower planning is good manpower research based on recognition of the fact of individual differences and the necessity to discover and optimally weigh relevant dimensions of human nature.

Chapter 11

Research on the Psychological Determinants of Occupations

Donald G. Zytowski

Dr. Henry has mentioned the college recruiter: the Standard Oil man sitting in a cubicle down some long hallway in a college or university, waiting for the next engineer to come in and talk to him about the opportunities at Standard Oil; or the Sears Roebuck man waiting for some business administration majors to come in and talk about the opportunities at Sears. Dr. Henry has covered what happens after they get into the recruiter's office; I'm going to attempt to conceive of what happens before.

We should begin by saying that the man who happens into the Sears' office is somehow different from the one who happens into the Standard Oil office. Caplow, a sociologist, has published a book, The Sociology of Work (1954), in which he asserts that the reason our two individuals got into different recruiters' offices, into different majors, and into different occupations is essentially chance--an accident. There are others, mainly psychologists, who think that this is not the case. This is the topic of my presentation--the factors which determine occupational entry, which reside in the individual and propel him into one or another kind of career.

The study of occupational determinants may be regarded as the matrix version of manpower distribution. The course of a man's career is most

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certainly shaped by economic factors such as the demand for products and services, innovations and new occupations, just as it is shaped by what man wants to do within the available range.

Most of the research on determinants of occupations has taken place since 1955. Most of the theories were advanced early, and in the following years there has formed a body of research relevant to each, offering some evidence, validity, or support for each one but vindicating none.

If we assume that manpower is distributed in some lawful way, we will have to assume that there is some force which energizes this process. The first person to make a statement of this kind was Donald Super. He published his theory in 1953, stating that career choices are made to implement a self-concept. This is a promising but vague postulate which requires a good deal of work to transform into testable situations. A number of investigators have pursued this postulate and demonstrated that, depending on how you tap the self-concept, the individual does choose and enter an occupation which he perceives to be suitable, satisfactory, or congruent with, or to implement the picture he holds of himself. What Super does not do for us is name the components of the self-concept. But in a later publication (1963) he suggests that there are a number of dimensions of the self-concept which should be recognized and that the individual should be free to specify his own dimensions and their interrelationships. He suggests the technique developed by Kelley (1955), called the Role Construct Repertory Test, in which the person compiles his own idiosyncratic self-description according to the things which are most important to him. In the Rep test, as it is called, Super elicits Occupational Talk which is matched in the person's hypothetical Occupational Dictionary for occupations which might be congruent with the concept he holds of himself. Only recently has the first report (Oppenheimer, 1966) appeared in which Super's postulate of choice has been tested with the Rep test technique. It generally supports the theoretical statement.

Super has the opportunity to test his entire theory with data he began collecting about 15 years ago from the entire population of the ninth grade of school in a small city in New York State. He has followed these students through school and into their initial work roles by now, and will follow them for at least 30 years, examining how they distribute themselves in the labor force and what kinds of patterns their careers make relative to the data which were collected first in the ninth grade and subsequently in terms of the self-concept rubric.

In 1957 another psychologist, Anne Roe, specified a set of postulates relating to the distribution of persons in the work force. She was able to make hers diagrammatic (Fig. 11. 1.). Perhaps it was the consequence of being a woman that Roe specified that early childhood rearing experiences form the value system from which the person makes his choice of an occupation. While she describes the intervening value system in her diagram, her data go directly from basic child-rearing atmospheres to entry into one of a number of fundamental kinds of occupations, listed at the outer ring in the diagram. To test these hypotheses it is necessary to pick up anywhere you can toward the center of the concentric rings and measure in the best way you can; then wait 20 years until your subjects have attained, more or less reliably, an occupation. Or you may find persons who are practicing a given occupation with satisfaction, and retrospectively examine what kind of family atmosphere they come from. The hypotheses are eminently testable, subject only to the necessity to wait or to obtain reliable retrospective data.

Since Roe's theory was published there have been at least six attempts to demonstrate its validity, none of which has succeeded. The problem seems to be of two kinds: (1) Either the groupings of the occupations, which she has done intuitively, are mixed or impure categories, allowing the admission of error; or (2) there is considerable error in the assessment of family atmospheres. One of her recent publications (1966) has demonstrated that her categories seem to be independent and discrete, so we may conclude tentatively that she has selected the wrong or an incomplete concept of family atmospheres. The only bit of positive datum that she or any other investigator has found has been on the effects of interaction with fathers and mothers in the careers of social workers and engineers. Men engineers tended to have the least stressful early family relationships, while women engineers had backgrounds remarkable for discontinuities of various kinds, accompanied though by a strong identification with their fathers. Social workers as a group tended to have more stress and less affection than engineers.

In 1961 Bordin and two of his graduate students at The University of Michigan published another schema of the determinants of occupations. Like Roe's it goes back to early childhood factors, but it departs from Roe in that it is formulated entirely out of the concepts of Freudian psychoanalysis, particularly concerning psychosexual development. One item to which Bordin has never referred is a remark by A. A. Brill (1904), a student of Freud, to the effect that the mechanism through which people got into their occupation is sublimation--that our adult way of handling childish needs is to convert them to socially useful purposes. For example, then, there would be very little difference between surgeons and meat packers; both are sublimating instinctive aggression. Bordin has formulated the same kind of theoretical statement. He breaks down basic childhood needs, such as those which relate to feeding, to elimination, to the exploration or curiosity need, and illustrates how they can be expressed in the activities of several adult occupations. These needs find their form no doubt in interaction with parents, and in this way the formulation resembles that of Roe, except that Bordin has arranged them on a different plane of conception. Table 11. 1 shows the needs Bordin formulates and the manner in which they might be expressed in their sublimated forms through occupational behavior. It would seem that this is a reasonable way to describe the motivational state of individuals and that one might be able to predict from the way in which these needs were handled their adult occupational behavior. Four consecutive studies by Bordin's graduate students have successfully done so.

Without getting into their technical methodology, most hard-nosed, data-oriented psychologists would agree with me that all of these experiments have not tested the hypotheses, even though they find positive results. There are methodological problems involved in the testing of theorems from psychoanalytic, dynamic formulations which essentially preclude the possibility of making an adequate test. Not the least of these is the circularity which holds between dynamic theory and the kinds of measuring instruments the dynamic theorist uses which prevents tests being applied from outside the dynamic scope.

If Roe mentions that there are early childhood experiences which determine needs which are in turn related to occupational entry, Holland

(1966) has allowed that there might be childhood differences, but that the needs as they are present in the adult or near-adult personality are the more valid determiners. He has gathered from a great number of studies of personality and interests in different occupations and postulated six personality types or orientations, which are congruent with six occupational environments. He describes them as follows:

> 1. The realistic Orientation--the person is masculine, likes to work with concrete things, is unsociable, aggressive, has good motor coordination. He tends to seek out such occupations as airplane mechanic, construction inspector, locomotive engineer, filling station attendant, and so forth.
>
> 2. The Intellectual Type--task-oriented, antisocial, prefers to think rather than act out problems, needs to understand, is ambitious, has unconventional values and attitudes, is anal rather than oral in level of psychosexual development. He prefers science, or being a college professor, a jurist, and the like.
>
> 3. Social Orientation--expresses self through interpersonal behavior and takes on such occupations as school superintendent, missionary, marriage counselor, high school or elementary school teacher, etc.
>
> 4. Conventional Type--a Bob Cratchit--likes structure and system, takes the subordinate role, avoids ambiguity in personal relationships and work which requires physical skills. Identifies with but does not participate in power, material things, or status. This type is the clerk, librarian, traffic manager, tax expert, and the like.
>
> 5. Enterprising--this individual has verbal skills which he uses to sell, dominate, or lead. He considers himself strong and masculine and is concerned with power, material things, and status much more than the conventional type. He is verbally aggressive, and as such will be a salesman, a TV master of ceremonies, a manager or executive, or a minister.
>
> 6. Artistic--this person is not interested in social matters and avoids highly structured or muscular tasks. He differs from all other types in having a need for individualistic expression, is more feminine in outlook and has emotional problems more frequently than other types. His vocational preferences include musician, actor, writer, artist, and the like.

Holland's theory postulates that individuals tend to seek environments and occupational roles which permit them to exercise their skills, to express their attitudes and values, to take on agreeable roles and avoid disagreeable ones. Thus, within the constraints which arise from sociological and economic factors, people tend to seek an occupational role which is congruent with their dominant personal typology. Several investigations of Holland's tend to confirm his hypotheses.

The final theoretical position which I have to offer is not so much advanced by a single individual but rather is developing from a cluster of experiments which employ a decision-making model. One theoretical statement of this point of view is that of Vroom (1964), which can be the starting point for this portion of the discussion. Vroom's statement is not unlike Holland's in saying that an individual's preference among an array of occupational possibilities is a consequence of the value of each outcome for him. In Vroom's view, this valuation may be ascertained essentially by presenting the several possible alternatives and asking the individual which he prefers. In this sense it is not much of a predictive theory. However, formulations by Atkinson and some of his students (1964) have been progressing toward prediction from more indirect methods of measurements, such as projective psychological tests.

The element Vroom introduces which represents improvement over Holland is the concept of expectancy. Since choices of work roles by adolescents cannot be regarded as the same as attainment of them, the choosers subjective estimate of his chances of attaining any given occupation combined with its value to him is a better predictor than only its value. That is, many persons would be very gratified to become, say, a novelist but do not choose that course because they are convinced that their probability of attainment is too low. Aside from the influence of personal values on the type of goal preferred, it has also been found (Mahone, 1960; and Ziller, 1962) that individuals vary in the value for different probabilities of attainment. Only one complete test of the validity of this formulation, using both sets of predictors, has been undertaken. It is an unpublished paper of Rosen (1961) who obtained high schoolers' ratings of the attractiveness of one occupation (architecture), divided the raters into high, medium, and low groups, and then fed back falsified data to the subjects on their ability to succeed in this field. He found, as the theory would predict, that the attractiveness of the goal held up for those who thought they were high on the requisite aptitude, and fell off increasingly with the information of poorer aptitudes.

The most glaring defect of the decision theory point of view is that as Vroom formulates it, it is hardly a prediction system. This is because to find out what kind of occupational behavior the person is motivated to emit, you simply ask him. If we are to anticipate how the labor force is to be distributed in the future if left untampered with, we need to ask very much earlier than just before the person enters it. We need to ask shortly before options in his educational path present themselves. Unfortunately, at this point of development the statement of occupational intentions a person makes is unreliable. If we had an accurate set of predictors such as Roe or Bordin postulate and the model for their functioning such as Vroom offers, then we would have an adequate theory of vocational choice for use in forecasting manpower distribution.

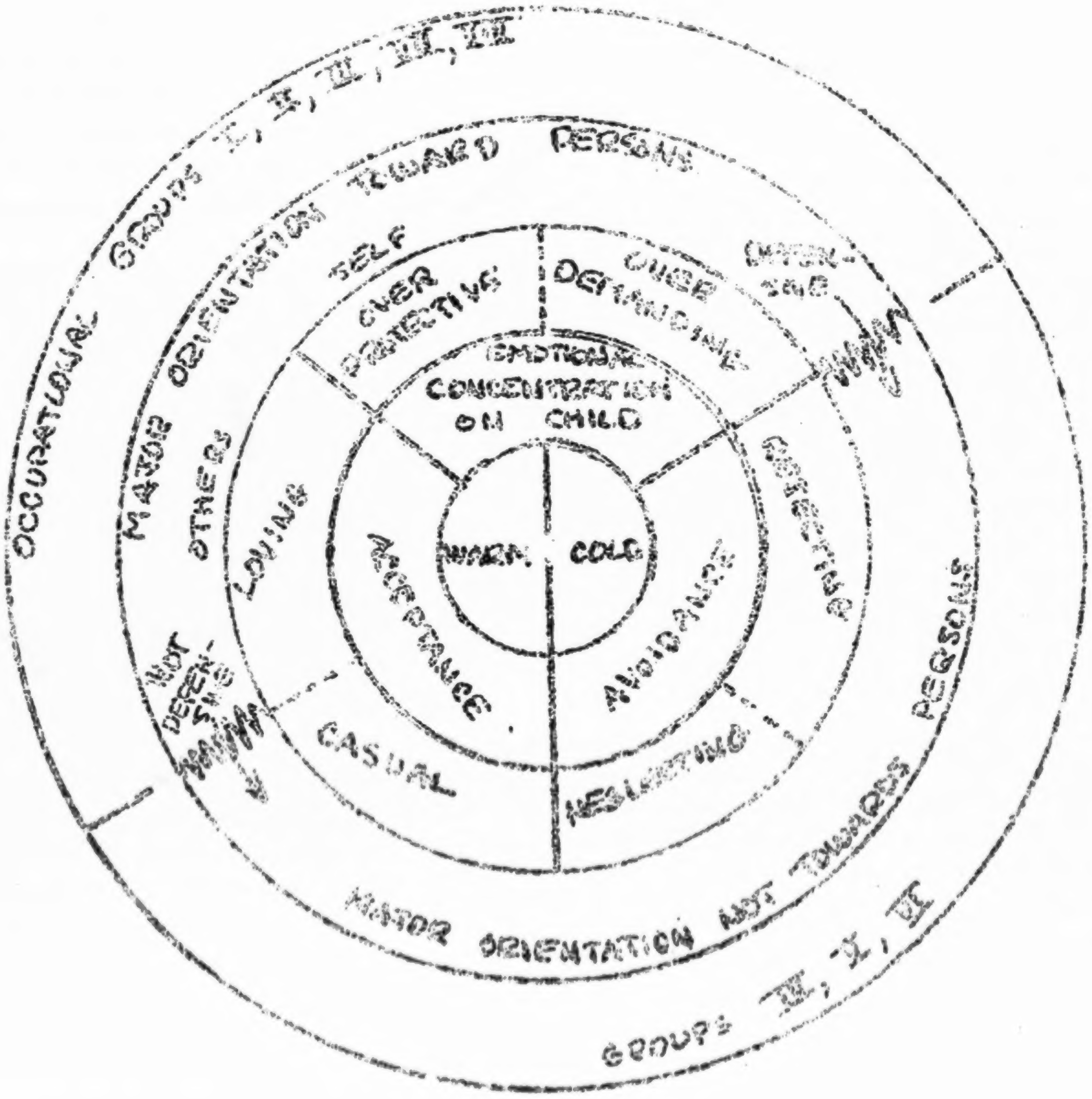
A good part of what is needed is already available: a conceptual system developed by a group of psychologists, sociologists, and economists (Blau _et al_., 1958). Their special contribution is in the conception of how the individual manages his preference. It is the rare person who has only one; many have several acceptable occupational roles, and by comparing his preference for each one with the other he is able to arrange them in a heirarchy. A good example comes from engineering training. At one engineering school, I have heard a saying which expresses this heirarchy by describing the usual progression of majors elected by students. It runs, "EE, ME, IE and out." That is, Electrical Engineering is regarded as generally better than Mechanical, Mechanical better than Industrial, and that Industrial is the bottom of the heirarchy. And exactly underlining the subjective estimate of the relative general preferences is the difficulty of the alternatives, in this case set up by the content of higher math in them. This may be true of any other heirarchy--that they are arranged in terms of ease of attainment, not only by reason of ability requirements but perhaps also in terms of the number of openings in that line compared to number of the applicants.

I have only one more component to add to the matrix of factors which determine where the individual goes into the labor force, which all theorists have omitted thus far. That factor is the cost of each preferred alternative. Theorizing to date assumes that the person acts to maximize his anticipated occupational satisfaction. I maintain that he is constrained to optimize in most cases: to choose the alternative which offers the greatest net gain relative to the resources he has or is willing to invest. The difference between a physician and a dentist, in my view, is that the dentist earns a little less prestige and almost as much money (and more regular working hours, if that is a benefit) for a considerably smaller cost. The dentist pays for an average of six years of school as opposed to eight, loses nothing on an internship, and is unlikely to take the equivalent of a residency in order to be able to start earnings.

In another way I hear the cost factor expressed almost daily. A large portion of the students who come to see me for assistance in their career planning wish passionately to get out of engineering school. Their explanation may be fused into this phrase, "I don't find engineering as attractive as I thought it would be. A guy has to spend six hours every night on those damn' problems courses and I don't see doing it for four years." I think they are telling me in essence that the choice of engineering is too costly for them--that they are too much deprived from opportunities to socialize, to pursue hobbies, or just to goof around. They just do not have it to spend as engineering requires.

To sum up, I have presented five points of view around which psychlolgists have organized their efforts to analyze the personological determinants of manpower or work-force distribution. They vary in the type of predictors they employ, the span of prediction they attempt, and the model of how the factors work together to determine what occupation the person enters. None of them has been shown to be especially valid: Either the evidence which has been obtained fails to support the theory, or no evidence has yet been applied to the theory. Nevertheless, the psychologist is unwilling to assume that labor distribution is entirely the consequence of the demand of the labor market, or that no personal factors determine who gets into what line of work. After all, when we analyze the characteristics of persons in a single occupation, we usually find them more like each other than like persons in other occupations. Some systematic selection and distribution must be operating. We have only to formulate accurately what they are and how they operate. Why is it that one man stops at the Standard Oil office and another at the Sears' office?

Fig. 11.1. Roe's early childhood experiences as determinants of occupation


OCCUPATIONAL GROUPS I, II, III, VII, VIII
MAJOR ORIENTATION TOWARD PERSONS
SELF
OTHERS
OVER PROTECTIVE
OVER DEMANDING
DEFEN-SIVE
EMOTIONAL CONCENTRATION ON CHILD
LOVING
WARM
COLD
ACCEPTANCE
AVOIDANCE
REJECTING
NOT DEFEN-SIVE
CASUAL
NEGLECTING
PERSONS
MAJOR ORIENTATION NOT TOWARDS PERSONS
GROUPS IV, V, VI

Occupational Groups

I. Service
II. Business Contact
III. Organization
IV. Technology
V. Outdoors
VI. Science
VII. General Culture
VIII. Art & Entertainment

Table 11.1. Bordin, Nachman, and Segal Psychoanalytic Schema

Basic Needs	Mode of Expression	Typical Occupation
Nurturant		
Feeding	Caring for patients	Nurse
Fostering	Fostering growth	Investment counselor
Oral		
Aggressive	Arguing	Lawyer
Manipulative		
Physical	Repairing or building machines	Mechanic
Interpersonal		Surgeon
Sensual		
Sight	Painting	Artist
Sound	Singing, talking	Entertainer
Touch	Smoothing, shaping	Sculptor
Anal		
Acquiring	Collecting	Museum curator Librarian
Timing-ordering	Scheduling, system analysis	Order clerk
Hoarding	Storing, keeping	Banker
Smearing	Smearing	Plasterer
Genital		
Erection	Construction work	Steelworker
Penetration	Cutting, shooting	Farmer plowing, Soldier
Impregnation	Planting	Farmer sowing
Exploratory		
Sight	Looking, inspecting	Inspector
Touch	Feeling	Sheet metal worker
Sound	Listening	Counselor
Flowing-Quencing		Firemen, Dam spillway opr.
Exhibiting	Showing	Artists' model, Actress
Rhythmic Movement	Dancing	Dancing

Table 11.2. Holland's personality types and typical occupational choices

Realistic

Masculine, physically strong, unsociable, aggressive; has good motor coordination and skills, prefers concrete to abstract; conventional political and economic values.

Occupations: Airplane mechanic, construction inspector, electrician, filling station attendant, fish and wildlife specialist, locomotive engineer, plumber, photoengraver, power shovel operator, radio operator, tree surgeon.

Intellectual

Task-oriented, intraceptive, asocial, prefers to think through rather than act out problems, needs to understand, enjoys ambiguous tasks, has unconventional values and attitudes, is anal rather than oral.

Occupations: Design engineer, anthropologist, biologist, botanist, chemist, editor of a scientific journal, geologist, independent science writer, researcher, meteorologist.

Social

Sociable, responsible, feminine, humanistic, religious, needs attention, has verbal and interpersonal skills, avoids intellectual problem solving, physical activity and orderly activities; prefers to solve problems through feelings and interpersonal manipulations of others, is orally dependent.

Occupations: School superintendant, clinical psychologist, welfare worker, marriage counselor, missionary, high school teacher, social worker, speech therapist.

Conventional

Prefers structured verbal and numerical activities, subordinate roles, is conforming, avoids ambiguous situations, and problems requiring interpersonal relationships and physical skills, identifies with power, material things, and status.

Occupations: Bank examiner, bank teller, bookkeeper, cost estimator, court stenographer, payroll clerk, quality or stock control person, statistician, tax expert, traffic manager.

Enterprising

Has verbal skills for selling, dominating, leading; conceives of self as strong and masculine, avoids well defined language or work situations, and intellectual demands, is extraceptive, has greater concern with power, material things, and status than conventional type; is orally aggressive.

Occupations: Executive, buyer, hotel manager, labor relations consultant, manufacturers representative, master of ceremonies, politician, real estate salesman, speculator, promoter, TV producer, traveling salesman.

Table 11.2. (Continued)

Artistic

Asocial, avoids problems which are highly structured or require gross physical skills; resembles intellectual type in being intraceptive and asocial, but has need for individualistic expression; has less ego strength, is more feminine, suffers more frequently from emotional disturbances, deals with problems expressively.

Occupations: author, artist, composer, singer, music coach, music arranger, playwright, poet, stage director, symphony conductor.

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Chapter 12

Organizational Theory and Manpower Withdrawal

Tom Lyons

This is a discussion of only those aspects of organizational theory that have direct implications for manpower withdrawal or participation. For the most part the withdrawal of member participation is treated only as a factor possibly affecting profitability or effectiveness and not usually as a dependent variable of prime interest in and of itself. The distinction between participative and productive behaviors has been made explicit by a few of the theorists concerned with organizations, notably March and Simon (1958), Katz and Kahn (1966), and two industrial psychologists, Brayfield and Crockett (1955) in a review of attitudes and employee behaviors. This last review, published twelve years ago, suggested that employee attitudes empirically were related to withdrawal behaviors such as absence and turnover but that there was little evidence that employee attitudes were related to production. Although there have been more studies since then, their initial conclusion still appears to hold.

Organizational withdrawal may be defined as leaving the work place or the context of organizational activities, permanently or temporarily, voluntarily or involuntarily, physically or psychologically, by a person who considers himself and is considered by others

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to have or to have had ongoing membership in some social system. The most extensively researched forms of withdrawal from industrial or bureaucratic organizations have been absence and turnover. However, using the above definition of withdrawal, other forms of withdrawal could be included, such as apathy, personal resignation, daydreaming, the various normal and pathological escapes from reality, alcoholism, and perhaps in some cases accidents, restriction of output, or, paradoxically, striving for promotion as a socially desirable way of getting out of an uncomfortable situation.

There is relatively little worthwhile information on withdrawal in the literatures of industrial or organizational psychology or sociology, anthropology, economics, or management sciences. Relative to other aspects of organizational life such as productivity, withdrawal has received little concern from organizational theorists or researchers.

The history of concern with organizational withdrawal goes back quite a way. The ancient Egyptians were concerned about absenteeism and, to aid in their study of it, classified absent workers as sick, placating the gods, or lazy (Gaudet, 1963). Bendix (1956) reports that two of the major problems the early managers of large-scale organizations had during the industrial revolutions were turnover and absenteeism. England, the United States, and, later, Russia all had extreme difficulties in getting the workers merely to come to work in the factories and to stay there, let alone getting them to give predictable role performances once they were present. In the industrializing nations such as in Africa, the absenteeism problem is one of major concern, along with turnover. It seems that whenever you impose large-scale, industrial organization upon a work force that has been primarily rural or small business, you have problems in terms of the workers' participation in it. This has happened throughout history and it is happening now. The earlier, pre-industrial conditions the "good life" in the early crafts industries where man was integrated with his work were not, however, as utopian as some writers might have you believe. It appears that there was little withdrawal from these medieval, patriarchal, family businesses and farms; but another alternative view is that in most industrial societies the farm and the family business presented an alternative to the early factory worker while in the pre-industrial society there were no viable alternatives open to the workers. Under these earlier conditions turnover was no problem because there was no place to turn.

For whatever reasons, withdrawal has been and still is a problem to managers of large-scale social systems. In the most recent national survey of its kind, as yet unpublished (one of the ISR surveys), it was found that almost 40 percent of the job-holders in America are still thinking about changing to another job or to another occupation.

Since their emergence, large-scale organizations have been viewed with alarm, criticized, defended, and tinkered with. In this area of highly emotional and value-loaded discussion, one of the more vocal actors is a Yale sociologist, Chris Argyris, whose fundamental thesis is similar to that of many other writers; namely, that there is a basic conflict between the needs of mature individuals and the demands of bureaucratic organizations as they now exist. In short (and like all thumbnail sketches this does violence to Argyris' writings), he claims that the traditional principles of organization such as chain of command, task specialization, unilateral power, and complete rationality create disturbances when they interact with persons who tend toward a mature state of psychological development of relative independence, activeness, and use of important abilities. The results of these disturbances can affect the organization and/or the individual. One of the effects of this conflict on the individual may be retreat from the situation, either psychological or physical. Argyris has culled findings from a massive array of data to support his propositions. Most of his propositions have received mixed support in predictive studies, and his general and specific hypotheses are still open to empirical testing. But despite this, or perhaps because of this, I recommend his book Personality and Organization (1957) as a source of many germinal ideas about the effects of bureaucracy on man and its implications for manpower withdrawal.

What is vaguely called organization theory today is a potpourri of contributions from a number of disciplines and sources. In reviewing some of these contributions I will concentrate on the study of manpower withdrawal.

The management school of writers probably have not ignored manpower withdrawal but rather just have not researched it well. Management theorists like Taylor, Urwick, and Drucker do not have much to say about manpower withdrawal, but personnel managers, the tacticians dealing with the problem, have written a great deal about it.

1. They constantly reiterate that absenteeism and turnover are costly to a company, and sometimes, although rarely, there is something done to estimate these costs.
2. They stress that something should be done about it and sometimes, although rarely, describe some single-treatment actions and their "results," typically without control groups and without even a sufficient description of what the actions were.
3. They describe initial phases of studies that seldom go beyond the preliminary data gathering stages.

However, from this mountain of research the management tacticians have produced some ingenious measures of turnover and absenteeism. Perhaps the most comprehensive sources on the measurement problem are two small monographs in the American Management Association's Research Studies Series by Frederick Gaudet (1960, 1963). These are also the best single reviews of the writings by the management people on turnover and absence.

This whole field of writings seems to be characterized by extremely general statements which lack the specificity necessary either to submit them to empirical test or even to use them as the basis for any concrete action. It seems to me that much of the writing in this area consists of unqualified, prescriptive statements based on research done by others in atypical settings. There is a good deal of ambiguity absorbed in each step of the marketing process of this sort of knowledge. The caveats, the speculations on post-facto findings, the emphasis on statistically significant but small relationships, and so on typically drop out of the writings as the report of the original research travels from the scientific and more specialized journals to the more popularized, broader-based journals or textbooks. The result is that the main conclusions survive but the qualifications do not, even when the original researcher advised extreme caution in the handling of his findings.

Statements prescribing actions in general may be based on such extreme situations as those studied by Mayo and Lombard (1944) in the rapidly expanding aircraft industry during the early days of World War II where turnover ran 1200 percent a year. This was an abnormal situation in which they found all sorts of fine relationships, but these same relationships might not be found in more typical industrial settings. Prescriptive statements for work-force populations based on research done by college sophomores in group dynamics labs may also be suspect. More subtle, but more common, is the generalizing of findings from self-selected organizations to industry at large. That is, there may be systematic differences between organizations that invite behavioral scientists into them to experiment and to study them and those that do not. These organizations may be systematically different from organizations at large where the social scientists cannot get their foot in the door. Almost all of our research done on the organizational, social-psychological level has been done on organizations that have invited and in many cases paid the social scientists either to study or to experiment with their outfits. I am not sure that these results will not generalize but I do not have any evidence that they will.

In the management literature, by and large, the isolated significant findings tend to be reported as something that is extremely common, pervasive, and so on. However, there is not a well-established history of successful replication or cross-validation of findings in the manpower withdrawal literature. With the opportunities for post-facto mining of the data for significant results, and with the reluctance of both researchers and editors to publish nonsignificant findings, almost all of the findings in this area should be treated as hypotheses for further testing rather than as conclusions based on findings significant at their reported .05 or .01 levels.

Kurt Lewin (1951) has theoretically defined behavior as a function of both the person and the situation. His followers generally have concentrated their investigations on the situational determinants, largely to the exclusion of individual factors, in studies of leadership, group dynamics, etc. The opposite emphasis on individual factors, largely to the exclusion of situational determinants, generally has characterized the approach of psychologists with individual-differences orientation.

These latter psychologists have contributed methodologically sophisticated but, generally, theoretically sterile validity coefficients to the prediction of turnover and tenure. The weighted application blank and measures of personality, intelligence, aptitudes, and interests have been shown to predict, with usually low validity coefficients, tenure with a company. This does not imply in any way that low validity coefficients are at all unique to the individual-difference psychologists. Low validity coefficients typically are found throughout psychology. Two major problems are found with these coefficients: (1) The relationships sometimes, or maybe even often, are unique to particular industries or even to a particular company within an industry, and (2) the relationships sometimes change or wash out over time (Schuh, 1967).

Two methodological trends appear to be slowly emerging with regard to the individual psychologist investigating organizational behavior: (1) the development of even more sophisticated conceptual and methodological procedures for predicting performance using change-over-time parameters

(MacKinney, 1967), and (2) increasing use of both individual and situational data. For example, although not explicitly concerned with withdrawal, Victor Vroom's study (1961) on participation was one of the few studies that have looked at both the situation in which the person found himself and the characteristics of the person himself. The research of Kahn and his associates on organizational stress, conflict, and ambiguity (1964) also used this combination of individual and situational determinants. Both these approaches, the combination approach and the change-over-time-prediction approach, potentially can contribute greatly to our knowledge of withdrawal behaviors. The utility of the second approach was quite simply demonstrated a few years ago by an individual-difference psychologist studying the effects of intelligence on turnover. This psychologist (Bills, 1923) used measures of mental alertness and of difficulty of the work in her study. The results were as follows:

Difficulty of Work	Percent Turnover After 30 Months, Workers With MA of 100 or better	MA of 80 or below
I. Most simple	100	37
II.	100	62
III.	72	50
IV.	53	58
V. Most difficult	41	66

Here is a very simple example of the combination of a situational factor and an individual characteristic, intelligence. One of the most interesting things about this research is that it was done in 1923 and it is still one of the neatest studies of turnover that we have. But this approach, the combination approach, generally has been ignored.

A large body of literature on organizational behavior has been contributed by researchers interested in the primary work group as the central focus of attention, e.g. Lewin, Likert, Lippitt, William Foote Whyte, Jaques, Cartwright, Zander, and Homans. Early work by these group researchers on manpower withdrawal was done in laboratories and in quasi-laboratory settings. (A quasi-laboratory setting is one in which the subjects themselves feel they have a part in some ongoing group whether or not it did continue.) A good example of this is Libo's work (1953) on group cohesiveness. Other field work was done with special populations (Coch and French, 1948). These subjects were typically unmarried, young, right out of the hills, had not had any other job, and, with the exception of supervisors who were not studied, they were all females. I would classify this as a special population. Much of the early work was done in nontypical situations, such as the Mayo and Lombard study (1944) in the West Coast aircraft industry during the second World War. This rapidly growing body of literature pointed to such factors as group decision making, group cohesiveness and attraction to group, peer group relations, and leadership as being important to withdrawal behaviors under certain conditions.

Later research in these areas has presented mixed support for the early findings. Oftentimes, the failure of early findings to replicate (as in the case of the attempted replication of the Coch and French experiment) has nevertheless added to our knowledge, broadened our view of the variables relevant to the study of molar behavior, and certainly demonstrated the potential risks of overgeneralizing the results of single studies. As an example of the problem of generalizing from special populations, even today in the fairly widely researched subarea of attitudinal correlates of turnover, the majority of the better individual-level studies have dealt mainly with young nonsupervisory women (Ross and Zander, 1957; Hulin, 1966; Wickert, 1951; Lyons, 1967). The reasons for this are understandable; Young women are willing respondents and also have a high incidence of turnover. Both of these are crucial for the study of turnover. Nevertheless, women do differ from men and it would be interesting, and perhaps informative, to see if the results would be the same for men as for women. This has not been done in the study of turnover, and when it was done in a study of absenteeism, there were sex differences in the social-psychological correlates of absenteeism (Metzner and Mann, 1953).

Our appreciation of "real-life" conditioning variables is rapidly growing in this area of primary-group theory. For instance, Revans (1964) in England found the head nurse (or "ward sister") in hospitals to be an important factor in student and professional nurse turnover or "wastage," while Bennis _et al_. (1961) and Lyons (1967) found no evidence of this in large hospitals in America. The suspected difference in results in the differential power or influence of the superordinate nurses in the two countries; that is, in England the ward sister had a great deal of power over subordinates in the forms of status, prestige, rewards, and punishments while American supervisory nurses lacked these. Homans (1965) offers this same variable, lack of power, as a conditioning variable that may be expected to reduce the impact of supervisory behaviors on employee production and, if we extend it, on employee withdrawal. Dubin (1965) suggests further that the individual nature of modern industrial work may also prevent group factors from emerging. Both of these variables, supervisory power and nature of the work, deserve intensive investigation as conditioning variables in further withdrawal research.

In short, the atypical conditions involved in some of these primary-group investigations, the limited populations studied, the minimal amount of cross-validation, and the more recent appreciation of many conditioning variables tend to make additional, more comprehensive work in this area of primary-group relations both necessary and valuable.

Another significant group of contributors to organizational theory are the structural theorists, largely sociologists, who have been concerned with causes and effects of various bureaucratic activities such as task allocation, exercise of authority, and coordination of functions. A good deal of manpower withdrawal research has been done in this vein, establishing end relationships between organizational structural variables and membership participation or withdrawal measures. For instance, Indik (1963) found that in 21 of 23 studies of sets of comparable organizational units, there was a consistent significant finding that larger organizations had higher turnover or absence rates. Much of this research was characterized by establishing the end-variable relationships between size and withdrawal and then explaining the relationship by suggesting processual or psychological intervening variables. The organizational process variables included communication, coordination, and control or influence. The psychological variables included degree of attraction among members, intrinsic job satisfaction, and felt bureaucratic inflexibility. However, with the exception of Indik's (1965) follow-up work on this, most of these lower-order intervening variables were suggested but were not carefully investigated. They were, in short, left in the speculative stage. Psychologists and social psychologists could contribute greatly to our understanding of withdrawal by critically investigating the social-psychological domain between the end variables that sociologists have established.

One area in which sociologists and psychologists could symbiotically combine orientations is research on the choice between conformity to social and bureaucratic expectations and permanent withdrawal from the organization. This apparently forced choice suggests research on the effects of conformity on the individual, on the various coping mechanism potentially available to the nonconforming individual, and on the effects of the individual on the organization, which may be considerable, especially if the individual has a position of power or if enough individuals act in concert. Although it was a sociologist (Merton, 1940) who pointed to the effects of the individual on the organization as a research problem 27 years ago, it has only been fairly recently that detailed case studies of management succession have been carried out (Guest, 1962; Gouldner, 1954; and Grusky, 1963). And it has been even more recently that quantitative, large-scale studies have been made of this problem on a level below the top man in the organization.

Top men do have effects on organizations. They tend to alter their jobs once they get into them, which makes job description extremely difficult at the top levels. But it is unknown to what extent middle or even lower level people can do this as an alternative to either accepting the situation as it comes or leaving. In short, the situation may not be a forced choice between two alternatives, of either accepting things as they are or leaving, but there may be a third alternative of modifying even a middle or lower level role.

The newest and most rapidly growing orientation is that of an open-systems approach to organizations. This is an adaptation from the cybernetic field, from James G. Miller's notions of open systems of general systems theory. In this approach the organization is seen as a system of repeated cycles of inputs from the environment surrounding it, of transformations of these inputs, or outputs to the environment, and as a result of the outputs to the environment of repeated cycles of new inputs modified somewhat by the outputs. The organization as an open system has characteristics of negative entropy (that is, it is necessary for survival that you import more energy from the environment than is used in the transformation and exportation processes); the characteristic of feedback about the environment; homeostasis (that is, maintaining a fairly steady equilibrium state); differentiation (because of growth); and equifinality (that is, the potential for reaching the same final state from different initial conditons and by different developmental paths).

Perhaps the best reference for a wholesale adaptation of the general-systems approach to organizations is The Social Psychology of Organizations by Katz and Kahn (1966). One of the reasons for the growing popularity of this broad systems approach is that it has the potential for helping to integrate the typically nonoverlapping work of such diverse researchers as individual psychologists and ecological sociologists. If it does this, it may help to bring together the methodological sophistication of the individual psychologists with the concern of the structuralists and sociologists for pressing, broad-scale problems of organizational behavior and social behavior. An example of this integration is the work of Kahn et al. (1964) and their use of the concept of role as an integrating device for studying individual, group, and organizational structure influences on behaviors and processes. A work similar in scope, although not explicitly identified with an open-systems approach, is Johnson and Hutchins' monograph on the medical school dropouts (1966).

Hopefully, this open-systems approach will direct more research to the problems of recruitment, utilization, and loss of human resources in organizational settings. At the very least, it should stimulate the interdisciplinary thinking and research efforts which are so badly needed in this area.

The last group of researchers I would like to discuss is a group of economists concerned with labor mobility. Their efforts are highly interesting for three reasons: (1) They have been almost alone among researchers concerned with organizational behaviors in their attempts to study withdrawal opportunities and barriers (Behrende, 1953, in England and Palmer and Parnes and their associates, 1962, in America. (2) Their research has been virtually ignored by the authors of organizational theory textbooks, despite the relevance of their research to the understanding of behaviors within and outside organizations. (3) Presumably because they failed to elicit any great response from sociologists and psychologists to join in interdisciplinary work, one group of these economists has broadened their own work to include sociological and psychological concepts and methods in their research on interorganizational and interoccupational mobility (Palmer et al., 1962).

Thirteen years ago, Parnes (1954) wrote an excellent critical review of research on labor mobility which still stands high as an informative guide to research methods, shortcomings, and pitfalls in this area, and also as a fertile source of research hypotheses.

Another original piece of research on a particular labor market is The Academic Marketplace by Caplow and McGee (1958). Aside from its intrinsic interest, it represents the only largescale attempt to systematically study the actual withdrawal of fairly high-level professionals from organizations. It is also interesting that this research on professionals agreed generally with the work on blue-collar, manual workers as to the importance of the "push" factors out of the job vis-a-vis the "pull" factors. That is, it is quite difficult to get a professor to move from a situation in which he is happy. There usually is some "pushing out" from the system, some negative push in addition to an attractive offer outside. This is also true for the blue-collar worker.

These then are some of the representatives of the contributing, or potentially contributing, groups of researchers to our understanding of organizational withdrawal. The amount of acceptable, empirical research is not great, but because of the molar nature of withdrawal phenomena, there are almost unlimited possibilities to combine the study of withdrawal and other phenomena of more basic theoretical interest.

On the individual level of analysis there is still a need for further research on the individual's processes of making decisions to stay as well as to leave, and optimally this research should include perceived ease of mobility factors and the individual's considerations of alternatives. This would fit in with the discussion on rational decision making. In short, we must study the barriers as well as the opportunities, the stayer as well as the leaver. I suspect that a study of sex differences in withdrawal might illuminate some of the basic dynamics of all withdrawal. There is a definite lack of information on alternative forms of withdrawal, such as alcoholism and apathy.

On the level of organization-individual interaction, we need good information on the effects of organizational participation on the individual over time. We need research on the effects of various types of organizational structures and processes on differing kinds of individuals. This is going back to the notion of combining the structural, objective, situational variables with the study of individuals. Related to this, we need to know the processes of how individuals adapt or maladapt to differing organizational situations. All of these can be best studied with the longitudinal design, and we have been extremely short on longitudinal studies.

On the organizational level, we need more information on the effects of withdrawal of various member groups on the effectiveness of the organization. We have one bit of information from a study by Georgopoulos and Mann (1962) on community hospitals: The turnover or absence of registered nurses had no effect on the quality of patient care and especially on the quality of nursing care as they measured it, but the turnover of aides was positively related to quality of nursing care. This is an interesting finding but we do not have many data on the effects of a lower group's turnover or absenteeism on any measures of organizational effectiveness.

On the higher level, we are lacking information on the moderating or conditioning effects of national, cultural, or subcultural variables on our individual, group, and institutional relationships.

Finally, the question of economics is still wide open on the interregional, interoccupational, intercompany, and within-company levels, to say nothing of the confusion existing within psychology on the purely individual level. Psychologists unfortunately do not understand very much about money--its effects, its interpretations, what it is a measure of, and so on (e.g. Opsahl and Dunnette, 1966).

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Chapter 13

Pros and Cons of Experimentation in Organizational Behavior

Aaron Lowin

It would be useful if we considered first what is the true mark of experimentation and how experimentation might be contrasted with observational methodology. An experimental setting is one in which the observer (experimenter) exercises his arbitrary power to cause events to occur as he would like them to occur. The experimenter steps into nature and deliberately interferes with the ongoing stream of events. He does this to establish such special conditions as would best answer the conceptual issues he has raised. In contrast, an observational approach to data is a naturalistic one; the observer searches among the continuing patterns of nature for those which would be appropriate to his inquiry.

For the record we should summarize here the conventional advantages of these experimental (manipulative) and observational (naturalistic) methods. Experimentation provides the more direct approach to the determination of causality and to the control or elimination of extraneous sources of variance (bias or noise). Experimentation permits obtaining precise measurements by shaping events to better meet the requirements of measurement systems; it also allows leisurely accessibility to relatively rare or short-lived states of nature or to those whose occurrence is otherwise unpredictable. Experimentation

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also provides a degree of insulation against administrative interference with the research program and occasionally against other extra-system unanticipated calamities that might flaw or disrupt an ongoing inquiry.

Among the disadvantages of experimentation (thus the relative advantages of the observational method) we should include the following. Experiments are usually short-lived and thus represent transient states far better than they do stable equilibria. They tend to focus excessively on a narrow number of variables (often one, two, or three), thus ignoring extra-experiment factors which may be critical but which have deliberately (by control) or accidentally (by randomization) been played down or not even recognized. Experiments are often vulnerable to the criticism of "artificiality" and may on occasion tell us little or nothing about the nonexperimental situation in which our real interest lies. Also, variables which receive the same label in an experiment as in the "real world" may on closer inspection prove to be vastly different in the two settings.

One should recognize that the above issues are not inherently associated with the method to which they are conventionally tied. Although these are the common advantages and disadvantages of experimental and observational methods, a properly designed observational study can include the assets conventionally ascribed to experimentation, and a well designed experiment can overcome the conventional limitations of experimentation. For instance, observational methods can permit causal inference if one is careful to collect the proper data and follow through with the proper analyses. Likewise, experiments which best describe only transient states can be extended in time to reflect long-term stability. (Indeed, time can be "speeded up" to capture in a short interval the events normally occurring over an extended period). Therefore, one lesson we must draw from the above arguments is that there probably are no absolute advantages or disadvantages of the experimental method. Most of the commonly described disadvantages of experimentation or of observation reflect common usage and the marginal competence of the researcher better than they do inherent flaws in his process of inquiry. A clever experimenter or a clever observer can overcome the conventional criticisms of his approach.

One may test whether a particular project is or is not experimentally oriented by imagining or observing what would be occurring in the setting in the absence of the researcher. Only if the significant events in the situation do depend on the direct or indirect presence of the researcher may we call that situation experimental.

It should be recognized that the ideal pure experiment does not exist. No experimenter can ever control at will all the myriad variables which affect the setting of interest; an experimenter chooses to affect a limited number of variables and to observe or ignore all others. Since there is no pure experiment, we may better conceive of experimentation as a matter of degree, with some studies more experimental than others. Likewise, one suspects that the ideal pure observational study is far rarer than is commonly believed. In the behavioral and social sciences as in the natural sciences, the observer often unintentionally intrudes on the setting he would prefer to observe in unaltered form. In physics this phenomenon has been labeled the Heisenberg Effect, and it is argued that it is fundamentally, theoretically, impossible to observe nature without affecting it, since measurement requires an energy exchange with nature. One suspects that in the behavioral and social sciences unintended effects of the observer on his setting are far more common than we would like to think; thus, that observers have tampered with nature far more than they recognize or report, and that ostensibly pure observational studies are tainted with covert manipulation. The same test which we considered above for evaluating the extent to which a study is truly an experiment may be employed here also as a first indication of the extent to which an observer has unintentionally altered his setting in the absence of the researcher. If it is reasonable that the presence of the observer significantly alters the situation, then the situation is not a purely observational one.

The unintentional intrusions by the observer on the setting under observation can be a serious matter in all the social science disciplines. In psychology we recognize today that subtle cues from an experimenter communicate to his subject the desired outcomes of the study. The obedient subject then modifies his behavior, and the experimenter's thesis is verified. In sociology and anthropology the problems of participant observation also reflect changes in the setting due to the observer. In economics and in the study of organizations, attention to records alters the manner in which these records are kept. There has been considerable discussion in political science on the effects of public opinion polling of voter preferences on voter behavior. And in history it is not inconceivable that the keeping of memoirs alters the very actions of the record-keeper. This is not to say that the physicist's Heisenberg Effect has inevitable serious implications for the social sciences. One suspects again that a clever and competent researcher can recognize and avoid serious observer intrusions and thus maintain the integrity of an observational study. It takes but a glance at the literature today, though, to note that there exist many more serious observer intrusions into ostensibly pure naturalistic settings than should be tolerated.

The gist of these arguments is that just as there is no pure experiment, the purely naturalistic observation study is likewise rare. A consideration of experimentation versus observation must, therefore, recognize that the distinction is a matter of degree and not of kind. It is true that the experimenter deliberately tampers with nature, whereas the observer does so in spite of his intentions to maintain his distance. But the distinction between experimentation and naturalistic observation has nonetheless been blurred by our remarks, sufficiently as to take the sting out of much of the conventional criticism of "the experimental method" as a unique and discrete mode of inquiry.

It should be noted in passing that the distinction we have drawn between experimental and observational methods, namely the degree of power exerted by the researcher in shaping the setting he is observing, is irrelevant to the issue of carrying on research in the laboratory or in the field. It is perfectly possible to carry out experimental research in the field as well as in the laboratory; and it is likewise possible to carry on observational research in the laboratory as well as in the field. For instance, the deliberate allocation of certain production materials or techniques to specified production units is a field experiment. Likewise, the observation of children playing together in a laboratory playroom is a laboratory observational study. Experiments are most commonly executed in laboratores (since the laboratory can more readily avoid the natural power field and the experimenter can more easily exert his own power in the needed arbitrary manner), and observational studies in the field. Therefore, many of the advantages and criticisms of experimentation confound issues of the researcher as a source of power with those stemming from the site of the research. Our appreciation of the conceptual issues of experimentation will be best served, however, if we distinguish between issues of researcher power and those of research site.

If one considers the several criticisms of "the experimental method" (such as those we barely touched on above), perhaps the most common and most serious is that which devalues experimentation or laboratory research because it is "artificial." It is not reasonable, the argument goes, to extrapolate from the artificial experiment in the laboratory to the "real world" because the two settings are so very different that conclusions formed in the former are largely irrelevant to the latter. This issue arises in the behavioral and social sciences wherever laboratory experimentation is contemplated or in progress. The point is sufficiently portentous that we must give it our full attention. Thus we will develop a strategy for examining a particular project that will allow operational determination of the extent to which that effort can or cannot be expected to carry implications for natural settings.

We may approach the issue by noting that the conventional designation of laboratory experimentation as "unreal" is both incorrect and misleading. A laboratory experiment must deal with the real world. It is impossible to conceive of what an experiment deals with if not with the real world. The above criticism can more properly be phrased by contending that the real world of the laboratory experiment is seriously divergent from that to which the researcher intends his conclusions to apply. Having done away with the "unreality" of laboratory experimentation, we may turn now to a consideration of the relevance of data collected in one (real) setting for some other (equally real) setting.

Consider any two settings for research or/and application of research findings, A and B. A and B undoubtedly differ in some respects. One may enumerate these divergences as an inventory of differences. The inventory thus lists a set of dimensions, D1, D2, D3...Dn, for which the values of settings A and B are unequal.

The investigator seeks to ascertain the relationship between some pair (or larger set) of variables (say, X and Y), and he chooses to do so in setting A, even though he is really interested in setting B. Consider that he finds X related to Y in setting A, and is tempted to conclude that X and Y will relate in similar manner in setting B. A critic might, of course, argue that although X and Y have been shown related in setting A, one may not infer a similar relationship in setting B since settings A and B are "different," on dimensions D1, D2, D3...Dn.

A more constructive way of approaching this problem is to ask whether the data can more reasonably be interpreted as evidencing an interaction between X, Y, and setting. If X affects Y in the particular manner found only in some settings such as A, then it is erronious to conclude that "X so affects Y." The proper and only proper conclusion is that there has been identified an interaction of X, setting, and Y; and that the main effect of X-Y relationship is disproven.

This analysis provides an interesting approach to the problem of extrapolating a finding from one situation to another. Instead of asking whether an X-Y relationship is as applicable in B as in A, it includes the setting (B or A) as an inherent conceptual element of the theory being developed. If one has a theory that X affects Y, and one can verify that theory in setting A but not in B, then there is something wrong with the theory, and the issue of the setting must be included as an integral component of the theoretic analysis. It is not enough to state merely that a particular identified X-Y relationship can be anticipated in certain settings. The proper analyst must also be able to argue, on a conceptual plane, why the identified relationship does not obtain in certain other settings; why variables X and Y relate as they do only under some conditions; why there is an interaction between X, Y, and setting. The problem of nonreplicability across settings is usually ignored or treated as a purely descriptive issue, with the investigator seeking to enumerate the setting boundaries within which his finding replicates. The present view demands that if nonreplicability occurs across settings, this problem must be incorporated at the level of a theoretical analysis.

It is of course impossible to firmly determine whether an X-Y relationship that has been identified in setting A is valid also in setting B without actually repeating the research in setting B. If the researcher is indeed interested in setting B but has collected his data in A, he has done so because it is somehow easier to investigate in A than in B. It would be inappropriate, therefore, to demand that he repeat his research in setting B merely to find out whether X and Y interact with setting. Such a demand misses the point that research has its economic aspects; thus, that research in setting A may be preferred over more direct research in setting B, even at the risk of inevitable ambiguities of interpretation.

Given that the researcher is primarily interested in setting B but finds it inconvenient to collect his data in that setting, and given that he therefore would prefer to collect his data in some other setting A, how is he to choose an A such as to minimize the difficulties of extrapolating from A to B? This is of course a problem we all face in designing research. Here is a suggestion. The researcher should prepare an inventory of differences, D1, D2, D3...Dn, between setting B and a proposed setting A. He should then clearly identify the theoretical arguments which lead him to anticipate an X-Y relationship. Finally he should examine each of his dimensions of A-B differences in the light of the X-Y theory and ask: Is there any conceptual reason why this dimension of difference, Di, may be expected to interact with variables X and Y? If there is some dimension of difference, Dj, which may on the basis of theoretical arguments reasonably be expected to interact with X and Y, then it is inappropriate to collect one's data in A for use in B. But if on a conceptual level none of the dimensions of difference, Di, may be expected to interact with X and Y, then there is no a priori reason to avoid setting A as a source of data for setting B. The above is an operational rule for systematically evaluating on an a priori basis the efficacy of collecting data in A for use in B. The rule is interesting for it prescribes that if there is no clear and cogent reason for not collecting data in setting A, then setting A is quite permissible. Simply because A and B are in some respects different is no reason to criticize the extrapolation of data from A to B. For the researcher, the rule structures the problem of deciding whether A is a proper substitute setting for B. And, it shifts the burden of criticism from the researcher to his critic, who is now required to identify a dimension of difference between A and B such as would on a conceptual level interact with the X-Y theory.

The rule allows us to evaluate the efficacy of using an experimental procedure to generate data for application to a naturalistic setting. We ask: Is there any difference between the experimental procedure and the naturalistic setting such as would probably interact with the X-Y relationship to be examined? If such a difference cannot be found, then experimentation is a proper procedure.

Our rule is a broad one, and it allows us to evaluate any proposed extrapolation, whether from experiment to natural setting, from experiment to experiment, or from natural setting to natural setting. The rule is relevant not only to our present theme of experimentation as a method of research but to any other extrapolation from setting to setting, or even within the same setting, from time 1 to time 2.

The analysis suggests that although it may be inappropriate to collect one's data in some specific A for use in B, there are likely to be other As which are more appropriate sources of data for B. The analysis suggests to the researcher how he could adapt a problematic setting A so as to better utilize it as a source of data for B. And it is clear that for any given B the utility of collecting data in A depends not only on the characteristics of A but also on the particular problem under investigation. The very same A may be an inappropriate source of data for B for some purposes yet a perfectly legitimate substitute for B for other purposes.

One conclusion is especially relevant to our major theme. It follows that an "artificial" experiment which closely matches the character of setting B may on occasion be a better source of data than naturalistic observation in a less appropriate setting. The utility of an experimental approach to some particular problem cannot be judged in the abstract. A particular experiment may or may not be appropriate depending on the problem, the specific nature of the experimental setting, and the alternate settings available for experimentation or naturalistic observation.

The various arguments considered above have stressed two points: (1) that the experiment-naturalistic observation distinction is one of degree rather than of kind, and (2) that the problem of utilizing experimental data for some other end can be treated as one instance of the broader problem of extrapolating from any setting to some other. Except for a somewhat small group of impassioned believers, one suspects that most researchers in the social sciences are uninitiated in experimental tactics in gathering data, and/or are rather cool to the deployment of experimental procedures. Our position thus far can be seen as favoring experimentation, at least insofar as it weakens contra-experiment arguments. The experiment is not something to be feared as categorically different from naturalistic observation. Experimental procedures can be so arranged as to minimize the problems of extrapolating from the data setting to the application setting. In fairness, therefore, we should consider also some of the limitations of experimental procedures.

The limitations of experimentation are more often than not really the limitations of the experimentally oriented researcher. Much of what we will discuss below speaks more to the researcher than to flaws inevitably inherent in his experimental strategy. Therefore, we will be more critical of experimental research that is in fact being done than of experimental research that could be done.

Consider, for instance, the experimental simulation of organizational performance in a university laboratory. One might wish to investigate productivity as a function of managerial style and to do so in a laboratory experiment. It is absurd to presume that the rate of cutting out paper dolls by three college sophomores during forty minutes in a sound-insulated one-way vision room has any relationship to the year-end balance sheet report of productivity by a large organization. Too many of the differences between the experimental and real settings may be expected to interact with the researcher's theory of how managerial style affects productivity. The analogy is certainly absurd, and the criticism is itself old-hat--everyone knows it, and everyone agrees. Nevertheless, tasks such as the cutting of paper dolls are to this day commonly employed in laboratory simulations of organizational behavior. The problem is most fascinating. Why in the face of unequivocal and very vocal criticism do practices such as this persist in the kit bag of experimental organizational researchers?

Tactics of research are not chosen arbitrarily from the set of all possible tactics by investigators. Rather, researchers have by dint of temperament or training favorite methods of their own, and they (the researchers) tend to rationalize their choices by overemphasizing the advantages of their preferred tactics and playing down the disadvantages. This method bias leads to the gradual development of facility and expertise with that method and thus to an understandable reluctance to abandon the approach simply because it has its flaws for some specific purpose. This is of course the classic issue of losing sight of the ends of a problem because of an overcommitment to the means. Finally the social nature of the scientific community is apparently such that one tends to be in closest contact with those others who share one's own interests, approaches, and methodological traditions. Therefore, the system tends to insulate somewhat the researcher from his critic, and the reduced impact of criticism permits the persistence of an inappropriate methodology.

The nature of research is rather personal, and the researcher often invests part of his own ego in his project. The project becomes a part of himself, and he recognizes that a judgment of his project implies also a judgment of himself. As a result the researcher cannot approach criticism of his own work in a totally cold and objective manner. Rather he is emotionally committed to the defense of his project and the methodology employed therein, and he examines criticism in a biased fashion, overemphasizing approving opinions and underemphasizing critical ones.

This overcommitment to methodology tends to blunt the ability of a final research effort to speak to the initial problem which motivated the effort. I recall a conversation with a researcher who was interested in problem we shall call X. He had chosen to investigate problem

X with some particular method, and it was pointed out that his method had so distorted problem X into problem Y that the conclusions he would derive from his data would not apply to the original problem X. Whereupon came the reply, "Problem Y is also a problem in need of solution." It was clear that problem X, at least, had been abandoned in favor of a more convenient challenge.

This discussion of commitment to methodology is relevant because of our interest today in the application of experimental techniques to organizational research. The experimental control versus naturalistic (laissez-faire) observation issue is very much a methodological one, and everything we have said regarding the reluctance of the researcher to part company with his methodology is relevant to the issue of the utility of experimental tactics for the study of organizations. The observationally oriented researcher is perhaps unfamiliar with and inexperienced in the use of experimental approaches to organizational research. But the experimentalist is overcommitted to his particular method of research. (Lest it seem that this overcommitment to the experimental method is exaggerated, let me note that there are in the discipline of psychology several societies dedicated specifically to the experimental analysis of one sort of behavior or another, and that an even greater number of journals include the word "experimental" in their titles.)

One suspects that the dichotomy between experimental and observational approaches reflects in part a paralleled distinction of ten labeled science (knowledge) versus technology (practice, action). The "scientific method" seems to be oriented toward the firm determination of a relationship between some two variables of interest, and it also seems designed to be useful across a wide variety of variables, topics, problem areas, even disciplines. (That is, of course, why we say the scientific method.) The "scientist" as practitioner of this method sees his goal as the empirical establishment of the truth value of hypotheses about variable-variable relationships; he is not especially concerned about the relative relevance of the particular relationship in which he is at the moment interested. The scientist's method is presumed to be applicable universally, and he sees no special reason for a permanent commitment to one specific problem area or another. His allegiance is to "truth," not to "utility," and he is prepared to move his house to wherever truth may be found. The technologist, in contradistinction, is basically committed to a problem area, and it is his goal to discover efficacious solutions for that area, even if these solutions cannot be objectively "proven" to the demanding standards set by scientist colleagues. In a sense then the scientist is more committed to methodology and less committed to content. Given the basic assumptions which underlie his interests, it is not at all surprising that the scientist can abandon one topic in favor of another merely because his methodology permits him to attack only the latter of the two issues.

This dichotomy of scientist-practitioner can be summarized by the distinction between statistical significance and pragmatic significance. Statistical significance argues that some variable-variable relationship is most probably true; but statistical significance does not attest to the importance of the relationship under scrutiny in the larger scheme of things. For instance we may be able to argue with dramatic statistical evidence that the weather on election day does affect the outcome of the election; yet the effects of rainfall may prove trivial if compared with those due to the economy, the political scene, candidate character, personal influence, political attitudes, etc. It is not surprising then that the scientist in his search for ultimate "truth" is prone to rely on statistical inference for support of his arguments, whereas the practitioner is more likely to ignore statistics in favor of intuition, verbal argument, or expert judgments.

I should like to go out on a limb and hazard the guess that the traditional scientific method may not be all that appropriate for contemporary problem solving. Classic science was committed to the search for truth, and truth in turn was portrayed as unambiguous. That viewpoint has certainly been much modified with the introduction of statistical inference in hypothesis testing, but one suspects that the use of statistics is viewed more as a means of overcoming imperfections in technique and noise in measuring instruments than as acknowledgment of the fluidity of natural phenomena. Indeed there remains to this data a lively discussion as to the propriety of statistical inference in scientific research. In any event the search for unambiguous findings may well be causing researchers to avoid complex issues which are steeped in ambiguity in favor of less vital but more easily structured ones.

The experimental method can now be seen as the method of choice for rigorous efforts as unambiguously identifying variable-variable relationships in nature. The method concentrates the researcher's attentions on but a few variables and trades off comprehensiveness of inquiry in favor of definitiveness of data interpretation. By focusing on only a handful of variables and controlling or avoiding most others, the experimentalist achieves the values of the scientist in his ability to make strong statements from his data. Unfortunately from our point of view the experimentalist loses sight of the socially sanctioned goal of problem-solving and does indeed learn more and more about less and less.

The strategic choice of experimental versus naturalistic observation approach corresponds to an economic decision as to how to allocate limited resources. Shall these resources be concentrated in a meticulous analysis of but one or two or three aspects of a problem, or shall the resources be expended instead on a broader approach which seeks to identify the major variables in the problem arena? The experimentalist would reply that while his approach is a narrow one, an extensive program of experimentation could cover the entire problem arena. But this retort loses sight of the crucial fact that research is always an economic affair, and that it is unlikely that the hypothetical strategy of experimenting with all aspects of the problem arena would soon (if ever) be realized. Even if such a long-term strategy were possible, it would hardly meet the needs of society for rapid prescriptions for current problems. And if we accept the thesis that the social world is in rapid evolution, then a long-term experimental program may end up generating solutions for problems which are no longer pertinent.

It is important, therefore, that the problem-solver recognize that the experimental method (as an adjunct of the "scientific method") may not be the most appropriate for his needs, and that the values underlying experimentation, unambiguity of findings, impersonality, replicability, and demanding levels of statistical significance may not be the most suited for his own ends.

A resolution of this dilemma between depth and breadth can be achieved if one recognizes that problem-oriented research can utilize the advantages of experimentation and those of naturalistic observation in an ordered process of inquiry. Observational tactics could be used to scan a problem and identify potentially crucial variables, experimentation can carefully test these issues in a rigorous manner, observation can verify the utility of the experimental findings when they are returned to the natural setting.

We have been working on a problem in organizational psychology which illustrates this integrated process of inquiry. Considerable observational research has uniformly revealed that the style of supervision employed by a manager seems to be related to the effectiveness of his subordinates. There is now an anormous amount of literature in support of this proposition, and the observationally derived correlational evidence is uniformly interpreted as evidencing the effect of managerial style on subordinate effectiveness. But an experimental scientist would argue that the direction of causality has never been proven, and it is certainly reasonable to interpret the evidence instead as reflecting the effects of subordinate productivity on managerial style. On the basis of observational data collected through time, Farris has argued that it appears that productivity affects managerial style more than style affects productivity. The problem-oriented researcher would like to be able to utilize the considerable literature available to prescribe managerial styles to supervisors. But the experimentalist's criticism makes it unclear whether the data justify such a conclusion.

We have teased these issues apart in experiments conducted in such laboratory settings as would allow extrapolation to real organizations (according to our earlier criterion of when extrapolation is permissible). Hrapchak has found that certain commonly discussed managerial styles do indeed affect productivity as predicted. Craig and I have found that productivity sharply influences managerial style. Both causal patterns are apparently operative. Our careful attention to details in these laboratory experiments has uncovered ambiguities in the interpretation of the managerial styles we have employed. These are ambiguities which did not crystallize in the earlier voluminous observational literature. Our need to prescribe to carefully programmed confederates in the experiment just how they should act out the various managerial styles they are to roleplay has uncovered several serious ambiguities in the particular theories of managerial style we were employing. These very same ambiguities would be faced by any instructor who might set out, on the basis of only the earlier observational literature, to prescribe styles of supervision for a group of managers. We have also found that whereas productivity affects all the managerial style dimensions we set out to investigate, only some of these styles affect productivity.

Given all this laboratory evidence, the next step would be a field experiment or observational study to ascertain whether the laboratory findings do indeed stand up in "real life." We need to know whether a real supervisor can maintain a style of behavior irrespective of his subordinate's productivity, and whether supervision trained in the styles we have found effective can indeed alter subordinates' behavior patterns.

The above is an example of how one may take advantage of the desirable elements of experimental and observational tactics in research while using each method to offset the weaknesses inherent in the other.

IV. Sociological and Anthropological Research

Professor James Whittington authored the first paper in this series and examines the ways of thinking about work which are a prominent part of every basic value system. The paper states that industrialism around the world is not likely to be a replication of the western rational approach to work, but rather will be some new system based on selective adoption and adaptation of new elements. The author also compares the North American work-oriented system of values and the basic values of the Latin American culture.

Dr. Harry Cohen's paper discusses three ideal types of societies, each with a specific configuration of attributes and each with a predominant social character. He argues that the United States is changing from a work ethic to a fun-oriented type of society. The paper tries to explain the nature of these social changes, the relation of these changes to the world of work, and the need for some action to solve some of the problems that come with these changes.

The third paper in this section, written by Dr. Ward Bauder, concerns the voluntary withdrawal of individuals age 50 and over from the labor force. Various occupations are compared, including farm to nonfarm, self-employed to wage or salary, and professional to nonprofessional. The general picture was one of great stability; however, changes are occurring, and on balance these changes indicate that older men tend to reduce their level of work activities as they approach retirement age, and the rate of reduction tends to increase with age.

The last paper in this section views the large white-collar systems of today operating as new types of mass production factories. Dr. Jack Siegman argues that the procedures in these white-collar factories are mechanical in nature rather than administrative, and this has more in common with the industrial work system than the traditional office work system. The people in the lower level white-collar occupations have little personal satisfaction and rewards from their jobs, thus leading to a high labor turnover in these jobs.

Chapter 14

Anthropological Theory and Industrialism

James Whittington

Modern urban, industrial culture can be characterized as largely a "work culture" (Anderson, 1964). In our work culture men are judged by their will to work and by the efficiency of their work, and we judge national cultures in terms of the units of goods and services their labor can produce or the amounts of energy their labor force can efficiently put to work. This work culture attitude has far-reaching social consequences; for example, the important positions of engineer and manager tend to be regarded ahead of the artist and academic scholar, emphasizing the relative importance of these positions.

Most men who work do not think much about the whys and wherefores of work. If they think about work it is usually the work itself that shapes the thought: what has to be done and how to do it, and perhaps the gains, satisfactions, and frustrations of work. By default, thinking about work has been the task of philosophers and others who are usually nonworkers. An examination of the literature reveals that most past conceptions of work have been directed toward explaining and sanctioning an existing social system; i.e., preparing people for the roles they would fill in the traditional order of things.

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Our discussion hopefully will be more scientific than philosophical. The aim of science is understanding and prediction rather than justification. Our discussion will present data and concepts which we believe will enable us to understand and predict some of the ways modern industrialism affects people and their values. We will not concern ourselves with the myriad of individual inventions and mechanisms for making work. easier or more efficient, or with the organizational features which shape our mechanized environment and accelerate our integration into widening urban industrial milieus. Rather we will be concerned with ideas--ways of work and ways of thinking about work--which are a prominent part of every basic value system.

Our North American varient of Western culture and our particular system of values regarding work have been evolving continuously for centuries, and what seems so ordered, systematic, and "natural" to most North Americans is the result of a long trial-and-error development in which a way of work and a way of living with it had to be learned. What we have learned is a proclivity for imposing work on ourselves. If it were natural for men to work as we do there would be no reason for the question "Why does that mad dog of an Englishman go out in the noonday sun?" when we sensible natives stay in the shade.

The great scholar Max Weber has described the intellectual forces which generated the value system of modern capitalistic, industrial society. This value system, which Weber designated "the Protestant Ethic" has an extremely important place in our modern work culture.

Despite signs of the emergence of an alternate set of values and a decay of the Protestant ethic (as depicted in recent books such as Fromm's The Sane Society, Riesmann's The Lonely Crowd and Whyte's The Organization Man) we do not feel that the basic value system described by Weber has been completely eroded. Rather, significant elements of the Protestant ethic system remain firmly entrenched in our culture as determinants of individual and group behavior. North American business, industry, and politics particularly, are controlled by middle-class Americans of a senior generation, most of whom share the values of the Protestant ethic.

Weber's analysis is important because it analyzes in detail the elements and processes which produced a set of values at least compatible with, and perhaps responsible for, the development of our capitalistic economic system. Of even greater importance is the fact that Weber emphasizes the role of ideas in history. Weber, an economist himself, rejected a sterile economic determinist approach and showed how ideas in the supernatural realm--ideas of the nature of God and man, of heaven and hell, of grace and damnation--could generate other ideas concerning work and leisure, money and time, saving and profit.

This way of thinking about work, whether we call it the Protestant ethic or not, is usually assumed by North Americans to be universal, innate, or human nature, and people who do not share our values are regarded as lazy. This is an error of ignorance; only a little probing into the history of American culture could reveal that this way of thinking and this way of life is recent, came into full flower in the northern American colonies, and spread westward with our public school system. North Americans grow up with the understanding that success has to be worked for and that each individual is responsible for his own success. The doctrine of "root, hog, or die" implies that the North American is supposed to be willing and able to do his own rooting. It became deeply ingrained in our outlook on life that a man must work and know how to work, and if he did neither, it was his own fault. Often the slogan for American foreign aid--"know-how"--expresses just this thought; we are missionaries for systematic and disciplined work which is motivated by an inner consciousness that work is somehow "good." Americans are not famous for their tolerance and understanding of other value systems, and this provincialism usually stems from just such ethnocentric misconceptions about "human nature." One of the contributions of anthropology has been to increase understanding and tolerance for other cultures. This is particularly important at this time when American industry is becoming increasingly oriented toward the world market and manufacturing branches are being established in foreign countries. These foreign production facilities will usually have North American supervisory and management personnel who will be implementing policy formulated in the United States by North Americans. The framework of development usually includes industrialization as a goal. Modern industrialization is generally thought of as simply the application of western techniques to production. We can assume, I think, that the values of the Protestant ethic will influence some of the policies designed for foreign industry, and that traditional value systems will find themselves in conflict with North American work culture values.

We may think of the development of an industrial work culture as "rationalization"; i.e., the striving for necessary order and efficiency. Some see this as dehumanizing, since rationalized work is concerned with performance and detached from the individual, his personality, and other nonwork factors. Max Weber, in his book The Theory of Social and Economic Organization, has pointed out the differences between industrial and preindustrial forms of administration, with industrial organization meaning rational and impersonal administration. Industrialism is now becoming global, and a rational work ethic will increasingly find itself in conflict with different traditional ways and values concerning work. Some analysts (e.g., Anderson) would suggest that there can be no compromise between the rational pressing for more efficient performance and the operation of magic, nepotism, class and caste systems, and other cultural systems that interfere with production. Others predict changes in basic institutions; e.g., Theadore Caplow (The Sociology of Work, 1954, pp. 249ff) speaks of the "incompatibility" between traditional forms of the family and the modern organization of work. That certain kinds of behavior and the values that produce them are incongruent with industrialism may be true. That they disappear or be restricted to the nonwork spheres of life is perhaps desirable. However, the theorists who predict complete rationalization in every case of industrialism seem swayed by formalistic definitions rather than by the empirical data available. A more realistic approach to the problem of conflict between rationalization of work and different traditional value systems would lead us to different conclusions.

Several models have been proposed to characterize the processes which take place when different sociocultural systems come into contact. Despite their differences all these models have several points in common. Generally they indicate that out of initial conflict and competition between different systems of behavior and values there emerges a new cultural pattern different from either of the previously competing systems. That is, acculturation is more a process of adjustment and accommodation than annihilation and survival of the fittest. We should expect then new systems to emerge from the conflict between the industrial rational work culture and different traditional cultures rather than complete domination and replication of western urban industrialism.

That this viewpoint is correct seems justified by the empirical evidence. An excellent example is the development of the Japanese industrial society. Analyses of the process of industrialization in Japan proceed generally on the assumption that the outcome of industrialization in that country has been, in terms of social organization and interpersonal relations, largely identical with the outcome of industrialism in the West. Japanese industrial development is seen as a triumph of western rationalism over the feudal order which had dominated Japan for millenia. An examination of Japanese social structure reveals this ethnocentric conclusion to be false and misleading. James Abegglen, in his recent book The Japanese Factory (1959), says that "in the critical areas of interpersonal relations and group interaction, in the definition of the nature of the industrial relationship between worker and company, and in the way in which skills and energies are mobilized and directed in the group, the Japanese factory is a variant of industrialization quite different from the American factory." It is true that western technology--machines and procedures--have been accepted and integrated into the production system, but the social relations of work have not become rational and impersonal as we consider the industrial system to require. Instead, the dominant values of a kinship-based social structure have been incorporated with remarkable ease and success into the bureaucratic management system of western industrialism. Social relations in Japan, as in most of the Far East, have traditionally been based on a very strong sense of respect for authority embodied in the ascending generations, and the model relationship has been the father-son relationship. Japanese industrialism did not reject this dominant value in favor of impersonal personnel procedures. To the contrary, the idealized father-son relationship became the model upon which all authority-subordinate relations are based. Foremen are "fathers" to the workers in their group, who behave toward them as "sons"; each manager and executive is a father to one or more subordinates and proteges who take the role of son. This model of filial respect and the intense personal emotions and attitudes engendered by it dominate the social relations of Japanese industry. This is certainly a far cry from the impersonal rationalism we consider imperative in industrialism. The Japanese case illustrates the kind of adjustment and accommodation we should expect in other cultures.

There are numerous other examples of the amalgamation of traditional values and "rational" procedures. For example Robert Presthus[1] describes a Turkish public enterprise committed to public administration but in practice operating with the traditional ideas of status, time, work, etc. Using western concepts, the course of management is not predictable.

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[1] "Weberian versus Welfare Bureaucracy in Traditional Society," Administrative Science Quarterly, Vol. 6, No. 1 (1961).

This preliminary discussion has, we hope, served to make one point clear: Industrialism around the world is not likely to be a replication of the western rational approach to work, but rather will be some new system based on selective adoption and adaptation of new elements. This should not be remarkable; it would be more remarkable if any people were able to suddenly put aside their past, their customs and habits of mind, and successfully and permanently accept a totally new social apparatus. This conclusion has obvious policy implications. Instead of attempting to make other cultures over in the image derived from western industrialism, our concern should be directed toward the identification of basic elements in the pre-existing social system and with the problems of conflict likely to arise when new systems of work are introduced in the context of older relationships. All our data indicate that a transition to industrialism can be accomplished most effectively when the changes are based on and grow out of the patterns of social interaction previously existing in the society.

Let us now proceed to apply these concepts and conclusions to actual situations. We propose to examine the areas of conflict between our North American work culture values and the basic value system of Latin America. This seems relevant since Latin America is rapidly urbanizing and industrializing, is strongly influenced by the United States, and has a value system sufficiently different from our own to create problems for any program of industrialization that proceeds on the assumption that the western model is the only possible one.

It is legitimate to ask "Does Latin America exist?" The twenty republics have great obvious differences in geography, population, resources, history, etc., and each country has identifiable regional "flavor." However, this is the "American" part of Latin America. We are interested in the "Latin" part; i.e. the basic values derived from a Mediterranean heritage and shared by most of the people in Latin America. This question has many ramifications, but most observers agree on a certain set of basic values common to the "middle strata" of Latin America peoples; it is with these peoples and their values that we will be concerned.

This notably leaves out the numerous Indian populations; including them would make our analysis much too long. However, we should mention some data that are significant. Beate R. Salz[2] studied the work attitudes of Ecuadorian Indians and found little congruence with industrial work attitudes. Despite the fact that the Indians worked continuously, there was little inner motivation to work. Anderson,[3] discussing these data, says "This would be disturbed if and when industry entered the scene; the two systems of work cannot live together. The clock-regulated industrial way of work would prevail." Industry has not come to this area to test this generalization. Data from a case of Guatemalan Indian industrialization[4] casts doubt on this dogma, just as the Japanese example did. Among these Maya Indians, accommodations evolved without plan through a process of trial and error over several generations, and the Indians have kept their cultural integrity and distinctiveness. The products made by these Japanese and Guatemalan plants are, of course, virtually indistinguishable from their counterparts produced in other parts of the world, but the social relations of work are extremely different.

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[2] "The Human Element in Industrialization" in Economic Development and Culture Change, Vol. 4, No. 1, Pt. 2 (1955).

[3] Dimensions of Work, p. 11.

Our procedure in this part of the discussion will be to examine the significant elements of the work-oriented Protestant ethic system of values and the basic values of Latin America culture. We will look for strong differences in the values relating to social relations, since we have seen that machines and technology can be accepted and integrated with greater ease than interpersonal relations can be changed. We will concern ourselves with possible areas of conflict, since areas of congruence will not cause problems. For example Latin Americans value urbanism--they want to live in cities, find urbanism desirable, and do not suffer so much from alienation and anonymity in city living.

The Protestant work ethic is built around the concept of salvation. Life and work are a means toward attaining that end and are guided by precepts of individualism, asceticism, and perhaps most important of all, continuous, systematic labor. We will examine then the conception of the individual, of asceticism and transcendental values, and of work, time and leisure as they appear in the two cultures. Assuming you are aware of many of the aspects of North American culture, most of our attention will be directed toward describing the Latin American conceptions. These ideas and attitudes do not sound like the values of the average North American, and they are not.

Individualism vs. Personalism

Both North America and Latin America place high value on individuality and "the person." The use of very similar words in English, Spanish, and Portuguese tends to obscure the profound differences between their actual meanings in the different cultures. The differences are something like this: In the Protestant ethic tradition a man is directly responsible for his own fortunes both in this world and in the afterworld; the burden of obligation for salvation rests squarely with the individual. A man is individualistic because he feels it incumbent upon himself to take personal responsibility for his actions since he cannot rely on periodic absolution by officials of the church. After the intellectual developments which produced the French and American revolutions, the North American credo included the notion of equality of opportunity. Each individual supposedly had equal rights and opportunities, and persons are considered socially equal. Any individual who claims to be unique must demonstrate achievements of a socially approved type.

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[4] Manning Nash, Machine Age Maya, American Anthropological Association Memoir 87.

North Americans claim to place a high value on the "individual," but most often this can be better translated as a respect for the individual's life and liberty rather than for his unique qualities as a person.

In Latin American culture the emphasis upon individualism is quite different. Although most Latin Americans give lip service to the idea of social equality (due to participating in the same intellectual tradition that produced the French Revolution), their underlying values emphasize the inherent uniqueness of each individual. That is, the individual is valued, and values himself, precisely because he is not exactly "like" anyone else. Each person merits, and expects, respect because of his unique inner self. The inner self is usually designated in Spanish as alma or espiritu; this generates misunderstandings because Americans translate this as "soul" or "spirit," and we are less accustomed to speaking of a living person as having a soul or spirit. The idea that each person merits respect for his inner worth and integrity does not hinder the recognition of social position or hierarchy. Each person is assumed to have a certain endowment of dignity, honor, and worth which merits respect from others and which he must safeguard at all cost. Whatever his social position, the Latin American has a sense of inner dignity. The Ecuadorian writer Pérez Guerrero observes an "exaltation of the I, which does not perceive itself as a unit in a group. . . .Pride and dignidad are exaggerated." A Mexican writer depicts his people as "not gregarious, but individualistic, and often lacking the spirit of collaboration. . . ."

The emphasis on personalismo means that words and actions interpreted as insults to the individual's inner worth may be highly explosive in their effects. For this reason social customs include elaborate precautionary measures of ceremonial politeness which are in constant use as a buffer.

It is obvious that American individualism which considers everyone of equal worth is quite different from the Latin American conception. Latin Americans are not likely to respond to an industrial system which attempts to "depersonalize" them. They will, we think, continue to demand treatment as distinct individuals. As Oscar Lewis notes for Tepoztlan, the Latin American is likely to quit his job if he does not respect his supervisor or find himself respected as an individual.

Various types of admired personalities are derived from the high values attached to personal integrity. Leaders in every category are able to function because they represent in their own personalities the inner qualities each person feels in himself and would like to manifest if he had the talent. Leaders are thus projective images of the qualities admired by the culture. This is in contrast with North American rational and pragmatic procedures.

Personal confidence in Latin America is reserved for a very few intimate friends and kinsmen. Impersonal confidence of the kind we feel, e.g., as a customer toward the salesman of a large reputable corporation, does not exist as a general pattern. To get anything done often requires "the personal touch," which may have little to do with competence. A person is simpático who can generate this confidence; if he cannot he will remain forever gringo.

The key to the Latin American as an individual is bound up in the word respetar. This is perhaps the most important work in Spanish for understanding

Latin American culture. Without mutual respect, interpersonal relations in this culture are impossible. Respect does not come from relationships of the impersonal, rational, bureaucratic kind; rather, the opposite is the case.

Asceticism vs. Aestheticism

The Protestant ethic was an ascetic one which rationed the use of time and controlled the profits of labor. Money and luxury were wicked if they resulted in idleness, as they most likely would. A man was ascetic in his use of time and money because his life's actions were evidence of his worth. The Protestant ethic makes waste of time a sin and curtails spontaneous enjoyment. This work approach to individual salvation, which advocates abstinence and pushes love, enjoyment, and pleasure into the background, is an artificial penance as the price of redemption. It is easy to see how this attitude fits industrialism--in the discipline of the factory there is no time for idleness and therefore no opportunity to sin. Even though modern industrialism has allowed North Americans to gain more and more leisure from their work, the inner motivations of asceticism have kept them from learning to use leisure naturally in the manner of the Latin American. The work enterprise, which has no place for love, humor, or humanitarian impulses, pushes these to the nonwork spheres of life.

The Latin American by contrast feels himself to be capable of great, strong emotions, and when one feels an emotion one should express it. The Latin American will express his feelings on almost any subject at the slightest occasion. This has led to characterization of the Latin American as a person of passion who may not do things according to reason or logic or calculation. He may often act according to impulse or intuition or under the urge of strong feeling. He may act under the impulse of his unique inner spirit, of gana. The Latin American likes to think of himself not only as a person of passion and feeling but as a person devoted to aesthetic values as well. Latin Americans have a deeper humanistic sense; they recognize the value of science and technology but doubt that man can fulfill his destiny by blind devotion to only those values. Their enthusiasm is not aroused by what they often consider to be undue emphasis on utilitarianism and pragmatism. Rather, there is an exaltation of human creative capacities, especially in literature and arts, and a constant insistence on the values of aesthetic pursuits. These values make life worth living for many Latin Americans, and any attempt to deal with them must take cognizance of this attitude.

The positive value for feeling and emotionalism has a negative aspect of ennui and routine, which must be avoided or broken whenever possible. Many Latin Americans become quite restless under the restraint of routine and are quite likely to leave home, family, and job to move to another locale and begin anew. The most frequent expression of this is the round of fiestas which occur throughout the year. Fiestas give expression to much that is basic to the Latin American character, and not the least is desire to escape from routine and ennui.

It is well known that Latin Americans scorn manual labor and are sensitive about the symbolic effects of being observed working. It is, however, a gross libel to call them lazy or indolent. Latin Americans habitually expend enormous amounts of personal energy on things they consider valuable, necessary, or interesting. But working just for the sake of keeping busy is not regarded as necessarily a good thing, and idleness in itself is not regarded as immoral.

This attitude has deep roots in Mediterranean culture. De Grazia, in his book Of Time, Work, and Leisure (1962), describes the viewpoint held by the ancient Greeks and Romans. This viewpoint persists in Mediterranean culture today and in Latin America; it is a set of attitudes based upon the notion of the gentleman-citizen. The gentleman has his obligations to the community, but labor is not one of them. Indeed he might lose status if he does manual work. Manual labor is performed for the gentleman by lesser people. Work is thought to brutalize the mind and make man unfit for the expression of higher emotions. Even our own conception has initially placed work on man as a penance or punishment for sin, and only recently has labor been recognized as a blessing or a necessity which has great moral and social compensations and which can bring joy and satisfaction and even salvation.

Latin American culture is shaped also by a strong sense of fatalism. This attitude has many expressions, but most important for our discussion is the sense of resignation to fate which leads to a tendency to deter the search for constructive solutions to problems. Failure and the psychological effects of failure are different in Latin America. Since most things are God's will, failure is due to fate and is not the person's fault. This lack of personal blame reduces the inner motivation to work for success.

These are some of the basic values, rapidly sketched, which shape the outlook of the middle strata of Latin American peoples. They suggest the background of traditional culture from which this rapidly urbanizing and industrializing area is facing the problems of culture change. We suggest that these are the ways of looking at life and human nature which must somehow come to terms with the demands of rationalism, and that there will emerge a new cultural integration which will allow Latin Americans to accept industrialism without converting to the dominant values of our work culture.

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Chapter 15

Sociological Theory: Changing Conceptions of Work

Harry Cohen

> It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness,...it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we are all going direct the other way.[1]

In this way Charles Dickens began his book A Tale of Two Cities. This book was written about two societies many years ago. Yet with all the years that have passed, many things have remained the same. The French saying, "The more things change the more they remain the same," still applies. Right now we live in the best of times in relation to abundance of material goods. We have wonderful products of all kinds including air-conditioners, electric lights, hot and cold running water, cars, and many others. These are the best of times we live in. In fact, we live better than the kings of years ago did.

Here I shall discuss a theory related to social character and changing conceptions of work that will help explain how it is that

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[1] Charles Dickens, A Tale of Two Cities.

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we achieved these best of times. However, we also live in the worst of times, because along with the many technological and materialistic benefits we also have a high suicide rate, high levels of anxiety and tension, and the need for tranquilizers which are one of the most highly sold drugs on the American market after aspirin, which is a type of mild tranquilizer in itself. These and other indicators of difficulty reported daily in the press and elsewhere show spiritual "worst of times" in the "best of times" age of material abundance. The purpose of this paper is to show how changing conceptions of work as related to social character have led to the best of times _and_ to the worst of times. The theoretical framework to be used to help explain a very complex set of social changes will be that of David Riesman and his associates as presented in their now classic book _The Lonely Crowd_.[2]

Riesman wants to know how societies seem to get that very social character they need in order to survive. How is it that a certain social character developed in years past gave a work ethic so desperately needed to meet the growing population? Why is it that this social character is changing in our age of affluence? Why is it that this age of affluence has also brought high levels of anxiety? And what has this to do with conceptions of work? Answers to these questions comprise David Riesman's work, and are the main subject of this paper.

First let us specify what is meant by _social character_. Social character is not the character of individuals. Social character is an _average_ character, the character of many taken together. We can take an average of the character of the American people and compare this with that of people in the Soviet Union. We can take the average character of one generation and compare it to another. This is what we mean by _social_ character.

Riesman asks: Why is it that societies seem to get the very social character that they need in order to survive? To begin his analysis he selects the population variable as the starting point from all the others operative in society such as values, technology, etc., realizing quite well that in a social system all are highly interrelated and interdependent. Nevertheless for a point of departure he arbitrarily selects one variable from the others. Three ideal types of societies are specified, each with a specific configuration of attributes and each with a predominant social character. These are placed on a diagram called the "S" curve of population growth, because with some imagination the stages of population growth resemble the letter "S." (See Fig. 15.1) The first stage, the Stage One society, is also called a high growth potential society.

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[2] David Riesman, Nathan Glazer, Revel Denney, _The Lonely Crowd_, New Haven: Yale University Press, 1961. The theoretical scheme presented in this paper derives from this book, but many of the value judgments and problem areas delimited, especially at the end, are my own, and Professor Riesman and associates should not bear responsibility for these.

In such a society the growth potential is very high but the population is small. These societies comprise the bottom part of the "S" on the diagram. Although the population is small, it is more or less stable over time. The birth rate is very high but the death rate is also very high which leads to relative stability in size over time. But the potential for growth is there should the death rate drop.

Stage One groups are folk-type peoples whom anthropologists would likely study. Such people look back into tradition because their problem is one of subsistence. Life is harsh. The food supply is limited. Death lurks everywhere, but the stork is ever bringing new mouths to feed. Thus there is no sustenance to support nor time for the specialization of occupations that we have in our present-day society. There is little time for contemplation, little time for and too much risk in scientific experimentation. Should the experiment in new hunting techniques, new food-gathering techniques, or such fail, then people starve. If any segment of such a society decided to gather knowledge instead of food, some would not eat. Thus the social character most efficient for such a situation is one which would direct people to the tried and true methods and ways of life of the past. This is called a direction toward traditional ways of doing things or the tradition-directed type of social character. In such a society the many years of hard labor and the many mistakes that were made in the past led to a type of survival of the fittest in cultural ways. Thus these people look to what their forefathers did. A symbol of this type of social character is a tribal mask passed down from year to year, put on by generation after generation.

Americans are often dismayed when dealing with such groups. They bring technological knowledge through the Peace Corps or in other ways to such tradition-directed peoples and find that often these people are not willing to adopt the new technology. However, we should understand that these people cannot take the risk of failure. If we in our affluence adopt a new idea and it succeeds in increasing yields we are even more affluent. If there is a failure we lean back on our surplus funds, food, production, and such. But in the subsistence economy the price of failure is starvation and disaster. There is no surplus to bail them out. Hence they stick to the tried and true ways, even if they are inefficient. They cannot and usually do not gamble on new methods; hence they cannot progress to the point of surplus which would support specialized occupations and would allow even newer ideas to enter into the productive capacity. Therefore they stick with tradition while we talk "progress" and science and innovation. Often we rail against these people because we do not understand them, but the reasons for their resistance to change are clear and quite rational.

Many times the tradition-directed societies remain stable, but sometimes they do change. Here they move to a Stage Two society on the "S" curve of population growth, the portion of the curve moving upward dramatically but in a short period of time. This stage is called that of transitional growth. Perhaps a genius was born in such a tradition-directed society. We might not have a written record of this but we can imagine a genius of Einstein-like quality born in a tradition-directed society who might make the connection between a

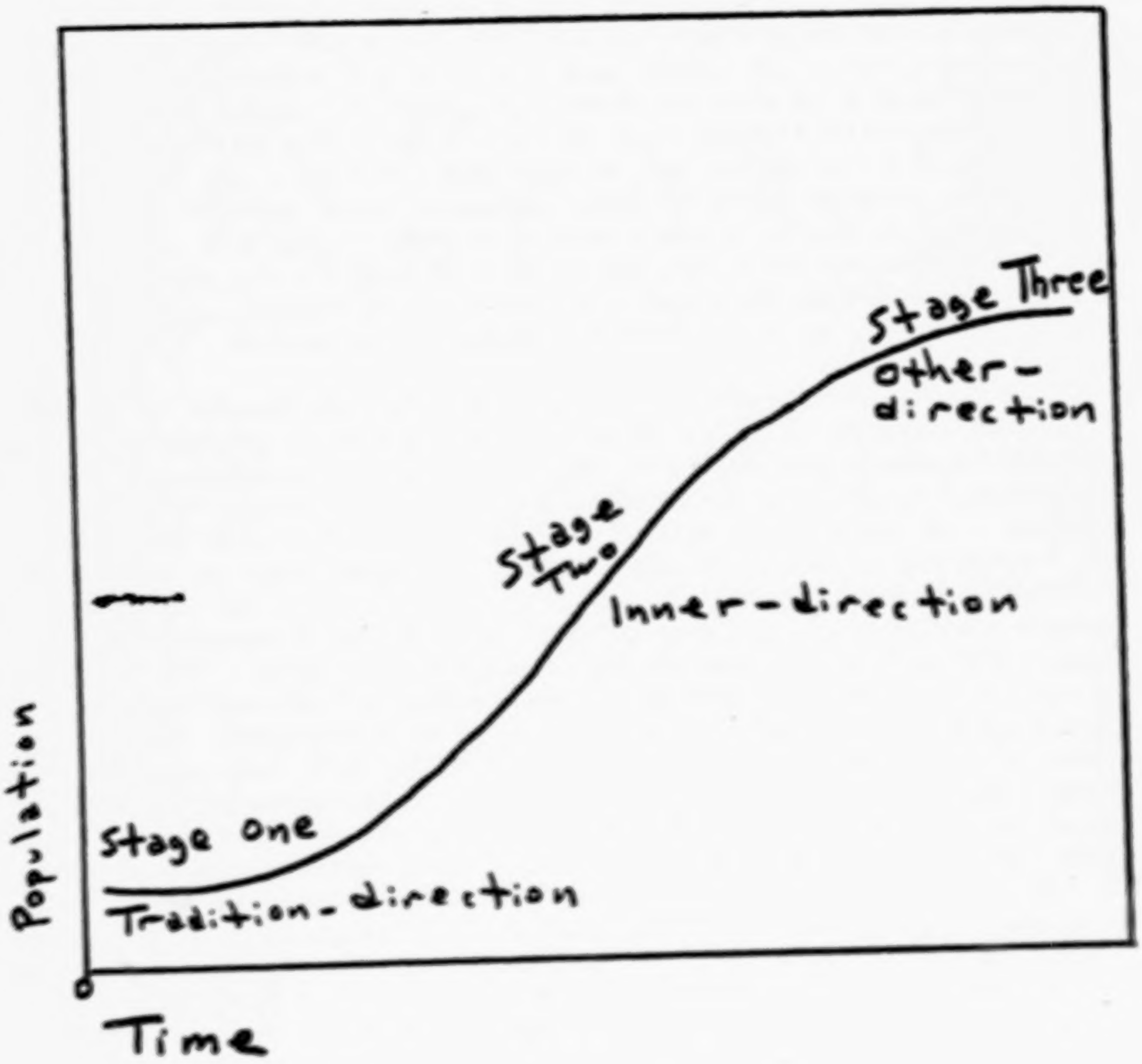

Fig. 15.1. The "S" Curve of Population Growth

pit he threw away while eating and the little plant growing later in the same spot. This connection between pit and tree, tried several other times with the same results, is really the domestication of plants and can lead to more food at the same time that the old ways of hunting and gathering are still practiced. This may lead to a food surplus and an increasing population supported by the extra food. Or perhaps medical personnel might leave drugs to be used with traditional witch-doctor paraphernalia. This might cause a decrease in the death rate. But the birth rate remains high so the population zooms upward in the form of a population explosion. This is indeed an explosion because it is not based on a progression such as two plus two equals four, and four plus four equals eight, and eight plus eight equals sixteen. Instead it is a geometric-type progress; on where two times two equals four, and four times four equals sixteen, and so on. This occurs because the excess population have children who in turn have children, all with large numbers of progeny who will also reproduce large numbers of progeny. The problem of how to support such a growing population is severe and such people cannot rely on tradition. If they do the death rate rises through starvation privation, and the society is back again to a Stage One level. How is the exploding population to be fed? Clothed? Housed?

The problem becomes a work problem. How can people be taught to adopt new ways of thinking about work so they will produce what the population needs for support? The old ways of unspecialized work are no longer sufficient for the booming population. The old tradition of working and then having a fiesta is no longer suitable when every day brings an increasing number of mouths to feed. A work ethic of what Riesman calls the inner-directed type or what Max Weber called the Protestant ethic[3] develops to goad people into work in and of themselves, through guilt over relaxation and through conscience as well. The Protestant ethic, a work ethic, comes about as a result of several factors. The first is the matter of predestination in Protestantism. People do not know if they are going to go to heaven or to hell, but people want to know. As a result of this, in an unanticipated consequence, people begin to look for visible signs of success--things that can be seen and touched. One can see his bank account grow, watch a business grow, and watch sales grow. One can see the quantity produced at work. All this presses toward a work ethic because it is through hard work that such successes can be attained. In addition, we have the development of saving and thrift where excess funds can be plowed back into the business. This leads to expansion of businesses and productive capacity of all types, exactly what the exploding population requires to meet their desperate needs for food and products of all kinds. In addition, such people are often nervous about predestination and are looking for signs of success that will prove to them that they are one of the "elect," that is, that heaven and not hell will be their end. We know nervous people are forever doing things with their hands and trying to fill time to forget their tensions. Such people often calm their nerves through work, which again presses toward a work ethic. Furthermore, such people see their work not only as work but as a "calling," where one does not only man's work on earth but also God's work. What better impetus is there to an inner-driven work ethic? And again this is the exact thing that the Stage Two society needs to support itself. Such an inner-directed society needs people with the inner-directed, work ethic type of social character who are willing to open another acre as our frontier people did in the United States, and then another acre, moving further west, opening and cultivating farm lands, exploiting natural resources, building towns, factories, and the like to support the needs of the growing population. Our pioneer ancestors worked and worked hard. They were not and could not be satisfied with just enough for their own families, and this of course allowed the growth of our entire society as well as population growth.

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[3] Max Weber, The Protestant Ethic and the Spirit of Capitalism, New York: Charles Scribner's Sons, 1958 (first published by Weber in the original version in 1904).

It should be specified that I do not speak of Protestantism as such but of the Protestant ethic which developed from it in a chain of unanticipated consequences. This led to a spirit of capitalism and hard work that built the Western world. This work ethic is not only involved in business but is part of science as well. We have the picture of the scientist who works into the late hours of the night because he is driven to work not from outside but from within. This leads to scientific advance which again provides help in the support of the needs of the growing population. The important thing here in relation to social character and societal needs is that we do not have to force people to work, but people want to do so in and of themselves. Another important point is that this was not a preplanned result by the leaders of Protestantism. Certain demands of the religion as well as other societal factors led to a work ethic that became part of the culture so that even those who were not Protestant eventually came to be pushed the same way. Teachers spread such a work ethic after having become imbued with it themselves. Success stories in books, Benjamin Franklin's admonitions about a stitch in time that saves nine, and the like also spread the ethic. And once again this is exactly what was needed by the society. In the Soviet Union this needed work drive from within was transmitted through Communism as a "religion." Those who were not pushed from within, such as tradition-directed peasants, were forced from outside, such as in forced labor camps; and the Russians too thereby came to support their growing population. Therefore, Russia in its time and way and the United States in its time and way developed work ethics which served to support the demands of growing populations.

In such a society then people work hard. This becomes part of the culture and the hard worker is viewed as a good man. These evaluations are passed down to children and to others, and those who do not work feel guilty in and of themselves. Guilt is the mechanism that keeps people at their work. Guilt is an inner mechanism. Not policy nor the army but the guilty conscience punishes an inner-directed population for laziness. And if a man is lazy and does not feel guilty, then sermons and insults are hurled at him as well as hate stares and then ostracism, which either make him work or throw him out of society. Here we also have the economic whip of hunger as an additional constraint toward work.[4] Those who do not work do not eat, nor do their children eat--which makes people feel hungry in the case of the former, hungry and guilty in the case of the latter. Thus people learn that work is imperative.

Our "the bigger the better" slogans are the artifacts of such a Stage Two work ethic. Why really should "bigger" make "better"? Size in itself often creates problems of all sorts. The bigger school does not always provide quality education; in fact, its very size often makes this goal unattainable. The biggest city is not always the best in any way. Yet, for a Stage Two society, the bigger the city, the better the booming population can be housed. The bigger the factory, the more that can be employed and the more produced to meet the needs of the exploding population. The larger the farms, the more food we have to feed the hungry people and their growing families. "The bigger the better" reflects the needs of the Stage Two society. These are the people who want to see their plants expand. These are the people who see the expansion of the business as a sign of success in the calling. This is the very kind of social character needed in order to keep such a society alive.

The symbol of the tradition-directed Stage One society was a mask passed down from generation to generation. Fear of being shamed and the threat of starvation were the mechanisms that kept people conforming to the old ways of life. The symbol of the Stage Two, inner-directed, work-oriented society is that of a gyroscope which twists and turns to keep on course. Here the course is hard work, and guilt is the mechanism of conformity attached to the gyroscope, making it effective.

We do not end our analysis here because times are still changing. In these days some societies, including the United States, have moved into an other-directed ethic, a Stage Three society, located on our curve of population growth near the top of the "S." Here we have a very large population but one which shows signs of leveling off and of future decline in number. This is called the stage of incipient decline, meaning that the decline is not yet here but there are certain signs of it in the leveling of the population curve from the zoom upward of the population explosion to the more gradual upward slope at the top of the "S."

In the inner-directed society there is a very high birth rate and a lowered death rate, so the population of course zooms upward in number. However, over time the very same ways of thinking (medical and other technology for example) that led to the rapid decrease of the death rate then are applied to the birth rate. In our very day in our very society we are currently developing and using more and more effective birth control devices. In addition, children are no longer of the same value in terms of work need. When there was an open frontier, children were of value as extra "hands." For example, even very young children could be used to tend the chickens. They were a labor supply and a labor force in addition to a comfort in companionship and an economic support in old age. With many children a farmer could open more acres, especially when these children matured to young adolescence. There was plenty of free land available, much play space and much work for children to do.

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[4] See Edward H. Carr, The New Society, Boston: Beacon Press, 1957, pp. 40-60. The term "economic whip" is aptly used in the title of his third chapter.

However, in these days of urban living, children are a nuisance because of overcrowding, apartment-living, specialized occupations performed away from the household (which means that children cannot help), and for other reasons too complex to be discussed here. Thus the birth rate begins to drop. The death rate is rather low too. Therefore we have a large population but destabilizing in growth rate over time, with possibilities for an actual decline in number in the future. At the same time, however, the production rate remains the same but the population in the Stage Three society is leveling off. Here the problem becomes not one of a work ethic and production but one of consumption. That is, the problem is one of buying the products spewed forth at a high rate with productive expansion built in as a need of the economy, but with a stabilizing population. The production and expansion line on the "S" curve follow the Stage Two slope (see the dotted line on Fig. 15.2), but the population expansion line is on another slope reflecting the stabilizing growth of population at the top of the "S." What would happen if people did not buy the excess production? The firms would retrench, people would find themselves without jobs, unemployment would lead to even less buying; in short, we would be in the throes of a bitter depression, and chances are strong that our society would be in a state of collapse if this condition were left unchecked. Here a change in social character comes to the rescue; people become less interested in work but more interested in pleasure, less interested in production but more interested in consumption. The excess production is bought off and the society remains viable. The type of social character that makes for what has been called the fun ethic, happiness ethic, and consumption ethic is called by Riesman _other-direction_. This is a social character directed not toward the inside of oneself but toward _other_ people--to what they are doing, what they are buying, what they are having, what they think, what they say, how they act, their life-styles, etc. We want to do what other people do. And what they are doing is making the "Good Life" through buying and accumulating products of all types. The "happiness ethic" demands fun and happiness for "adjustment," and our happiness is rooted in objects we buy and use, all the while keeping the hundreds of thousands of workers on the job producing to meet the demand as we buy to get rid of the supply. The money these workers earn by satisfying our desire for products they then spend to buy up the excess production of other firms and other workers in all segments of the economy. Style changes and planned obsolescence as well as new products introduced keep us constantly dissatisfied with what we have, and thus we are pressured to buy new things, especially when _other_ people are doing so too.

A person of the inner-directed type would save his money and not spend on what he does not truly need. The needs of the other-directed type are different. A closet full of clothing, for example, is not sufficient if the styles change and _others_ are wearing different types of clothes. What would appear as a waste of money and clothes in the inner-directed stage is exactly what is now needed to keep the economy on an even keel. _Anxiety_ about what _other_ people do, what they think of us, and such is the mechanism that makes us want to buy so we can, superficially at least, be like others. If a sense of true commonality and community is lacking with other people today--and this is the nature of our society with a large crowd like population, near people but lonely, a "lonely crowd" as Riesman refers to it in his book title and content--then we are anxiety-stricken to at least prove that we are "with it," and not "out of it" completely, as is stated in popular parlance. When we wear what others do, buy what they do, and such, at least we are externally like them, and this proves to us that we are not totally alone. The symbol here is the radar set that keeps us tuned to what other people are doing and buying. Another symbol is the credit card that helps us buy, even if we have to mortgage our future at jobs we do not see as a "calling" in order to make money to pay for the goods (and note the term "goods") bought, and to buy other products. Thus we are kept at work less because we love work than as a result of the desire to consume even over and above subsistence needs, which requires money, which in turn requires a job.

Since we do not know people deeply but only look to superficialities and external symbols, we become like other people in terms of common products owned, but really we are alienated from them. In addition, work is less fulfilling since it is only a means to an end, that is a method of earning money to buy things. Hence we are alienated from work too. Such alienation and anxiety help provide the worst of times all the while we are consuming the goods and "goodies" of the best of times. Ask a worker about his job and he will likely answer sadly, "Oh, it's a living"--"living" here meaning a way to earn money. Life is thus equated with money. Ask a person about a party and he might perk up and say, "Man, that's really living!" This is how the other-directed, fun-directed populace see life today. Thus the effects of this new ethic are sometimes not quite as fun-oriented as the ethic itself.

Another problem of the change from a work to a consumer and fun ethic is that of a "characterological struggle"; that is, a struggle or conflict of social characters. Every person does not change to the new ethic, nor do social groups evidence the same rate of change. For example, there are still upper-management groups which are imbued with the work ethic. These are faced with a work force that is increasingly interested in the "Good Life" which includes much money but includes work only as a necessary evil. Such groups hold contradictory views of life and hence there is what can be called a value conflict; often neither side understands the behavior of the other, and both see one another as foolish, irrational, and sometimes even as bad. Much of what is called the "generation gap" is also such a struggle between character types. Many older people are still imbued with the Protestant work ethic, but their children and grandchildren are more inclined to be of the other-directed character type; hence there is misunderstanding, conflict, and alienation one from the other.

There are some people caught within the change and thereby they lose an organizing principle to their lives. These become confused and are often even alienated from their own selves as well as from other people. Such people, having been imbued with the inner-directed work ethic, feel guilty when not working; however, they are also subject to the forces of the newer other-directed ethic and hence feel anxiety-stricken when they work and are not appreciated for this work-drive by others. Such people are guilt-ridden when consuming, spending heavily, and having fun. Yet

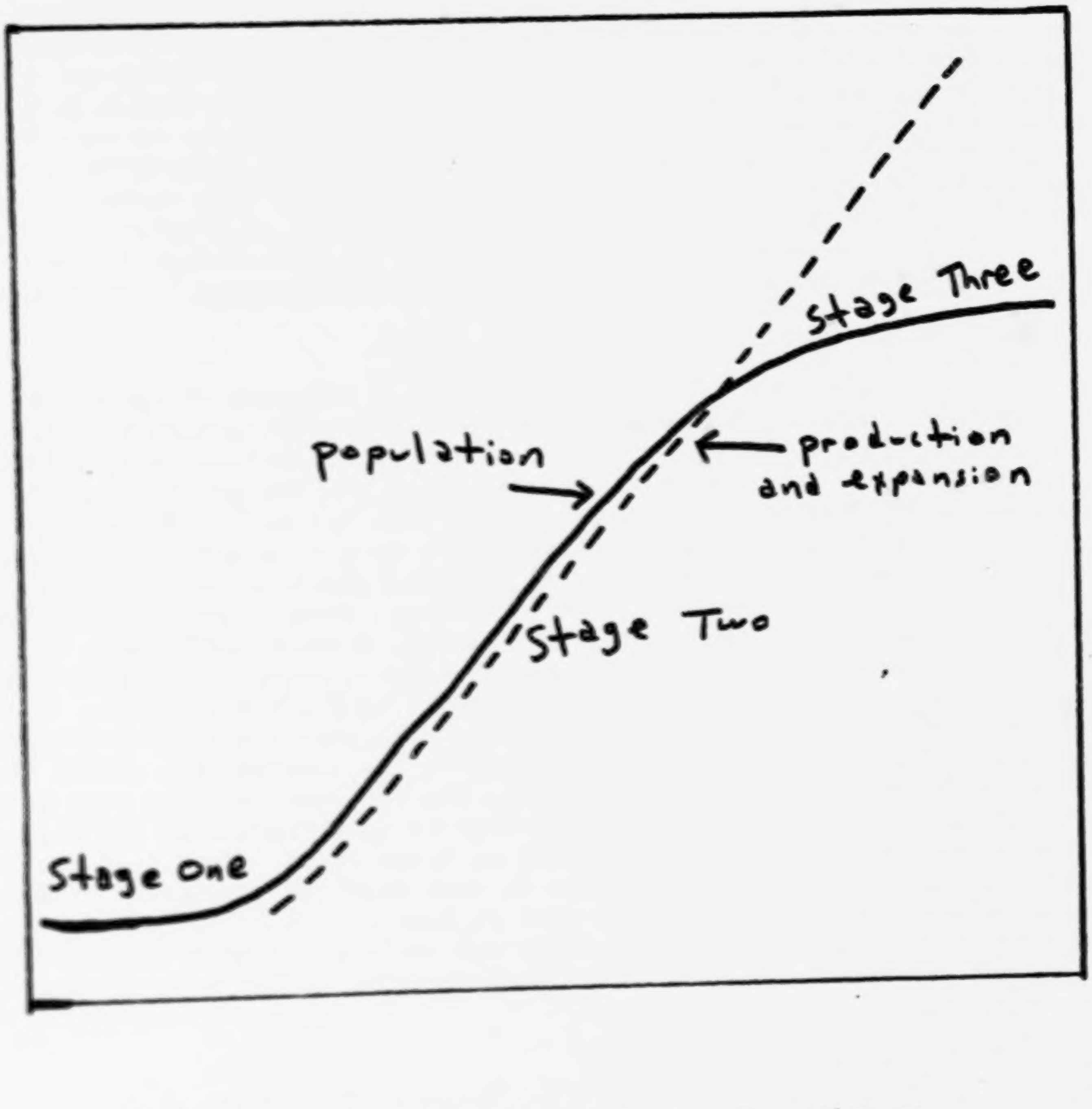

Fig. 15.2. Production and Productive Expansion as Related to the "S" Curve of Population Growth

they are anxiety-stricken when working and still see others having fun. They are guilt-ridden when they copiously spend their hard-earned money; anxiety-stricken when they do not buy what others have.

The characterological struggle is also operative between whole societies. For example, American businessmen are often faced with a tradition-directed populace when opening businesses in Latin America.[5] Such businessmen who are imbued with the work ethic have conflict with the tradition-directed population when they set up inner-directed work rules and the like. The characterological struggle is evident in other areas too. For example, Russia seems to be following in the footsteps of the United States and is also showing signs of moving to the other-directed stage. Red China is firmly in the State Two society. Hence we find the Red Chinese claiming that Russia has lost its revolutionary (read "work") zeal and has aligned itself with the United States and its decadence (read consumer and fun-ethic). Russia claims that the Red Chinese are irrational. The Soviet Union is increasingly interested in consumer goods and the "Good Life." Hence, despite the issue of communism versus capitalism, the Russians are in social character becoming like the Americans. To the Red Chinese, faced with a population explosion and using Marxism as a "religion" to transform the nation from tradition-direction to inner-direction as a means of national survival, this is a "sell-out." Needless to say, such conflicts between manager and worker, older and younger generations, within people, and between societies and nations can lead to much misery; hence, another evidence for "worst of times" with the "best of times."

Another problem was forecast long ago by the sociologist Max Weber in his book The Protestant Ethic and the Spirit of Capitalism.[6] This is a problem of nothing less than human and personal freedom. The "Good Life" notwithstanding, many people are so caught up with the "need" for goods that they have less fun than might appear from only superficial observation. They live through and with "things." When without "things" that other people have they become anxiety-stricken and feel miserable and left out. Hence these people erode their strength, their dignity, their own "selves," at jobs they hate, in order to surround themselves with consumer objects, and thereby to prove their belonging. However, they still are, as Riesman's book title indicates, "lonely crowds." Their relationship is through things and objects, not really through people; hence they must be lonely and alienated, all the while proving "belonging" and "togetherness" by buying what other people buy, living as they do, etc., without ever asking, "Do *I really* want to live this way? Is this really *me*? Do these things give *me* pleasure? Or do they force me into behavior which does not gratify *me*?"[7] Truly as Emerson has said, "things are in the saddle and ride mankind." The need to buy begins to lead us, instead of we ourselves deciding what we shall buy, what we need, how we shall live, and the like. Hence the issue is one of personal freedom.[8] Max Weber saw this over 60 years ago when he wrote at the end of his book:

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[5] In another paper in this series Professor Whittington has argued that the American often misunderstands members of different cultures because conceptions of work differ. He proposes that many American businessmen are work-oriented and time-conscious whereas other peoples may be more tradition-directed in life-styles and conceptions of work and such. My point of view appears at first reading to be contradictory to his, since it is my point that the United States is changing to a fun-oriented, other-directed type of society, replacing the work ethic. However, these approaches are not really contradictory. Many top-level, managerial-level officials, the type which would be most inclined to engage in long-term business contacts with people in other nations are still inclined to hold the work ethic. Their children and wives are more inclined to be changing to the other-directed approach. The characterological struggle is the problem here within the executive's own family as well as within his business dealings with peoples in other societies. What we could predict is no narrowing of the differences in world-view in the near future as tradition-directed peoples become inner-directed. The reason for this is that American managerial officials could be expected during the same time to become more of other-directed type which will still lead to conflict and confusion between peoples of different cultures, not to speak of the remaining differences of language and culture.

[6] Weber, op. cit.

> In Baxter's view the care for external goods should only lie on the shoulders of the "saint like a light cloak, which can be thrown aside at any moment." But fate decreed that the cloak should become an iron cage.[9]

For the other-directed type it is not enough to surround himself with objects, goods, etc. only when he can easily get them, but he *must* have these or he is anxiety-stricken. Unlike the person who can enjoy products but can throw them aside at any moment, the other-directed type *must* have the products others do or his entire attachment to self and society is shaken. Thus such people are not quite as free as they think. They are in an "iron cage." Their need to be like others and have what others have cannot be thrown aside at any moment. Thus these "needs" imprison them into life-styles, the purchase of products, etc. as if they were in an iron cage. Automobiles as the symbol of the American "Good Life" truly become iron cages. Some men in fact do not even find their masculinity and male-power residing within themselves; it resides instead in the horsepower and status-power and iron-power of the automobile.

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[7] See Erich Fromm's writings for excellent analyses of such issues. See for example his books, *The Sane Society* and *Man for Himself*, available in varied editions including paperback.

[8] This is a problem not only of the inner-directed stage. The person imbued with the work ethic is alienated from his work, his products, and his own self when forced to work at any job just to avoid starvation, without finding himself and his place in life at work that meets his individuality, creativity, and spontaneity; in short, where a man is forced to work at a job that he cannot perceive as his particular "calling." We shall turn to this point again in this paper when quoting from Max Weber's work.

[9] Weber, *op. cit.*, p. 181. The reference to Baxter is cited from his *Saints' Everlasting Rest*, Chap. xii (no further information is given in Weber's citation).

If the automobile is our iron cage, transforming whole cities to meet its needs, transforming the entire "Good Life" into the machine, then the television is our wooden coffin. It is no longer a matter of doing with or without it, light-cloak style, but it is a cage-coffin that people *must* have, *must* watch, tenth-rate programming or not. And as the cars, televisions, and the like are bought, so does the American economy survive, and so do workers by the thousands earn money to buy the products *they must* have, luxury-type or not, iron-cage style, in order to be like everyone else. People today feel they *must* have these products in order to be "normal" and to fit, to have a least a superficial sense of "togetherness" if not real relatedness. These things or the lack of them provides a sense of selfhood such as evaluations of self as good or bad, rich or poor, success or failure, he-man or not. We are provided a sense of identity through *products* and through mimicry of others. We know who we are in the same way that we evaluate others: through the products owned. However, even in these boom-times we cannot always have what we have been taught to need. Thus we suffer an alienation from self--what is called an identity-crisis. A sense of worth, a place in life, and such are rooted in products and expensive mimicry of others in life-styles. If we cannot have what others do because of poverty or other problems, we then are crushed and have nothing within us to sustain us. In other words, identity for many today is through products, not within one's own self. If the products are not as good as others have, we suffer a crisis of our own identity. But if the products are not really "us," meeting our *true*, deep needs, then we suffer a problem of identity and alienation too. Even when we do and can enter the iron cage of consumption and product ownership, even when we do change our entire life and moral styles to meet the tyranny of others and what they do, think, have, etc., we still often become alienated from self because we may meet the patterns of others but erode our own uniqueness, "calling," spontaneity, drives, will, dignity, and the like by so conforming. We have found products but have lost our own selves.

Max Weber cues us in on another problem in his prophetic words at the end of his book, *The Protestant Ethic and the Spirit of Capitalism*:

> For of the last stage of this cultural development, it might well be truly said: "Specialists without spirit, sensualists without heart; this nullity imagines that it has attained a level of civilization never before achieved."[10]

The point is, as Weber tells us: "The Puritan wanted to work in a

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[10] *Ibid.*, p. 182. Weber does not specify the source of the quotation. I have heard it said that it comes from Schiller.

calling; we are forced to do so."[11] Thus in the modern work world--starting with the inner-directed man who could not find his calling but was forced to work at jobs he hated in order to eat, until the present day where people view the thought of a calling as "square" but still work at highly specialized, minute, segmented, routinized jobs--specialists we are, but without spirit. Watch most people at work and see how spiritless they are--the sullen student, the mechanic who returns your car in as bad a condition as when you first brought it, the apathetic clerk who does not know where anything is and does not care to find out, the bureaucrats who shift your problem from person to person listlessly trying to "pass the buck," the hundreds of thousands of glum faces at machine jobs everywhere, faces which light up only when conversing or joking with a colleague or at the thought of vacation-time. However, we have also become sensualists without heart. On vacation people aim for sensualism, but without heart and without soul, as we say in popular parlance, meaning really dehumanized behavior patterns. Consumption, fun, and such are to give us pleasure, but still many engage in such sensualistic pleasure without heart. Note the bored faces watching television, the listless faces on aimless Sunday drives, the half-hearted attempts at being "jolly" epitomized by the forced laughter in time with that of the canned laughter of television. Our new playboys, specialists in the "Good Life," the epitome of success in terms of life-style as portrayed in the Hollywood ideal and transmitted to the population, are also sensualists. Their "pads" are well supplied with the "goodies" or our technological civilization; the money flows like water (and so does the wine); and the women who fall for all of this end up being sexually used, as objects, but without spirit, without heart, without emotion, without love, without true relatedness. It is sensualism only to pass the time, "killing time," to avoid being "bored to death." Note also the death themes here. Work in such a society then becomes spiritless, a means to an end (money), and there is no pleasure in the work as such. The money then buys the "Good Life" and all of its products so people can become sensualists through things, in ways the opinion leaders do, through people used as things, and thus they become heartless too.

In all of this commotion there are some good-natured souls who still want to "help people." These people, in conjunction with government programs and funds, then try to train and even to retrain the hard-core unemployed, ghetto dwellers, etc. However, once trained they are shipped off to the jobs they were trained for--to become spiritless at highly specialized, dull, boring tasks which these people may visualize, and not too wrongly either, as degrading. Then we wonder why so many "backslide" into their former street-corner, lazy days. The point I am trying to make here is that we try to make these people over into our own image, for their sake of course, but since we have closed our own minds to our own plight we try to make these people into what we are, the "specialists without spirit," so they can earn money for the "Good Life" in order to join us in the "iron cage of external goods," and to become "sensualists without heart." When they rebel, we think _they_ are "no good." If we could better adjust jobs so they would have some sense of mission, a "calling" over and above mere money-making, and provide more truly

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[11] _Ibid._, p. 181.

productive work and leisure-time outlets, we might find that these people themselves would be more enthusiastic about being trained and retrained and would backslide the less once trained. Nevertheless, in the same way that we have been socialized toward other-direction and the constraints of the Stage Three society, that is, through life-adjustment teachings in school (how to adjust to the other-directed society by being like others, etc.), through movies and advertisements that create needs for products that billions of people managed to live quite well without over the generations (color television, stereo record-players, etc.)--in the same way do the lower classes learn the same lessons. We learn that work is an evil to be avoided, but if we must work it is for money only to buy the "Good Life." Can we expect the lower classes to learn any differently, especially if any money they can earn at work is only minimal anyway? It is no wonder that we find urban rioters looting stores and gleefully carrying off radios, televisions, clothes, and such. The bureaucrat who uses every scheme possible to do as little work as possible, the lazy student who will not do assignments but will cheat on exams to pass, and every lazy worker throughout the nation are looking only for money--or in the case of students for grades to get a good job, which means much money for little work. With the money more stolen than earned they then buy products and are called respectable. Some rioters do not work and only loot for the products they have learned to need in "iron cage" style, and these are called criminal.

I do not point a finger of scorn at any of these types. It is better to understand all of these forms of behavior than to scorn and condemn. If we would want fewer specialists without spirit, fewer sensualists without heart, fewer rioters and looters, fewer lazy workers and cheating students, we had better start repairing the basic structure of our society. Our economists must devise schemes so our society will not crack under the onslaughts of depression if people become less adjusted and more autonomous--that is doing less what everyone else is doing solely to be like others--and being instead more spontaneous, unique, creative, and free, working at tasks and playing in ways that people truly want and need as real people, each person in his own special way. Our psychologists and sociologists must help rebuild and repair the system that made *things* important and people secondary. We must return the "self" and productivity, the "calling" if you wish, and true human-to-human relatedness back to human kind--and not mediated by and through products we are taught to "need," because firms have consumer goods spewing forth at a Stage Two pace in a Stage Three population curve. Our anthropologists must run, not walk, to all those societies adopting the American technological society haphazardly and warn them of the problems that will come with it, and help them to pick and choose the best of times, eliminating the worst of times. And we had better work up solutions rapidly, because though we as scholars can stay in a place, the times change. Automation, for example, promises to create economic, social, and psychological upheavals of the most fantastic order. Our Stage Three society may require that people purchase, but in our present scheme of things we need money to do so, and most have to work for it. What will happen if automation makes people lose jobs so they do not have the money to purchase the products they have so successfully been taught to need "iron cage" fashion?

There is the story of the union leader who was taken through a new automated automobile plant by the manager. The manager gloated over the number of people replaced by the machines. He asked the union leader, not without a trace of sarcasm, "Now who is going to join your union?" referring to the machines that were now making cars without the help of the former workers. "But who is going to buy your cars?" responded the union leader.

There are many issues and questions that time does not permit me to go into here. What is the evidence for the alienation referred to here so many times? What solutions are there for the problems mentioned? How do people become imbued with the new social character (only a limited number of methods such as advertising have been mentioned here)? How does my usage of Riesman's scheme differ from his own usage? These and other issues are important. We have at this conference the types of scholarly personnel that ought to be grappling with these issues, here and elsewhere. This paper only skims the surface, attempting to tie these issues into a theoretical framework for purposes of a common language of discourse and for clarity. Hopefully, this paper, if nothing more, has helped you to understand the nature of our social changes, the relation of these to the world of work, and the need for some action to solve some of the problems that come with these. Let us work to reduce these "worst of times," so we can have a society that can truly enjoy "the best of times."

Chapter 16

Modes of Labor Force Withdrawal: The Older Citizen

Ward W. Bauder

Why study the end of the work career? Apparently this is a question that has not been asked very frequently by social scientists because there are few recorded studies. Students of American society have concentrated their attention on the first half of the life cycle. This no doubt reflects the preponderance of youth in the population through most of our history and the youth emphasis which still characterizes American society. However, as advances in medical science and nutrition have brought larger and larger proportions of the population well into the second half of the cycle, interest in the adjustment problems of the second half have increased.

Emphasis on youth and the adjustment problems of youth produced growth or development types of explanations of the changes that occur in the life of an individual over time. When we began to look at the adjustment problems of the second half of the life cycle it was natural to look to development theories for explanations. Implicit in much of our contemplative literature is the idea that every individual has at least the potential to expend his social world indefinitely until death takes him away from it.

More recently attention has been given to changes in the second half of the life cycle which appear to be the opposite of growth and development,

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and a theory called disengagement has been formalized.[1] Very briefly, disengagement is described as a process of social and psychological withdrawal from active engagement with society, the reverse of the process of engagement which occurs for the young as they enter active participation.

The test of a theory is its ability to explain events or relationships. One of the objectives of the research I am reporting was to test the relative validity of these alternative theories.

Several other considerations influenced us to study withdrawal from work roles. One was a desire to know how adjustments to the problems of the second half of the life cycle vary among different occupations--farm compared with nonfarm, self-employed compared with wage or salary, and professional compared with nonprofessional. A second was to learn something about how withdrawal may influence adjustment to retirement.

The end product of withdrawal from work roles is, of course, retirement from the labor force. Census figures suggest that this occurs at different ages for different people. This is evident from the fact that the proportions of older men in the labor force is much higher in some sectors of the population than in others; for example, it is higher in the rural farm population than in the urban or rural nonfarm population (Fig. 16.1). National data on the age structure of the labor force in different occupations also show that at present there are concentrations of older workers in certain occupations. Occupations with high concentrations of older people are more likely to be rural than urban. For example, although managers and officials in retail trade are not especially rural occupations, they are more rural than the labor force generally. Thirty percent of the persons in this category had rural residences compared with 22 percent for all persons in the labor force. Their relative ruralness is reflected in their age structure. Among retail trade managers, proprietors, and officials, 60 percent were over 45 in 1960 compared to 39 percent of all persons in the labor force.

Farming is the most exclusively rural of all occupational categories. In 1960, 60 percent of all farm operators were 45 or older and 14 percent were 65 or older. In contrast, among operatives--a predominantly urban category of the labor force--only 35 percent were over 45 and only 2.4 percent were over 65. A part of these differences is due to a difference in rate of entrance of younger men into the occupational category, but some is due to a tendency among farmers to retire at a later age.

In any case we felt there was sufficient general evidence of differences in retirement patterns to justify including different occupations in the study. We obtained complete interviews from 359 farmers, 335 factory workers, 467 owner merchants, 388 salaried professional, and 373 self-employed professional workers. The samples were self-weighted or additive within occupational groups but not between groups.

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[1] Elaine Cummings and William E. Henry, Growing Old, Free Press, Glencoe, Ill., 1957.

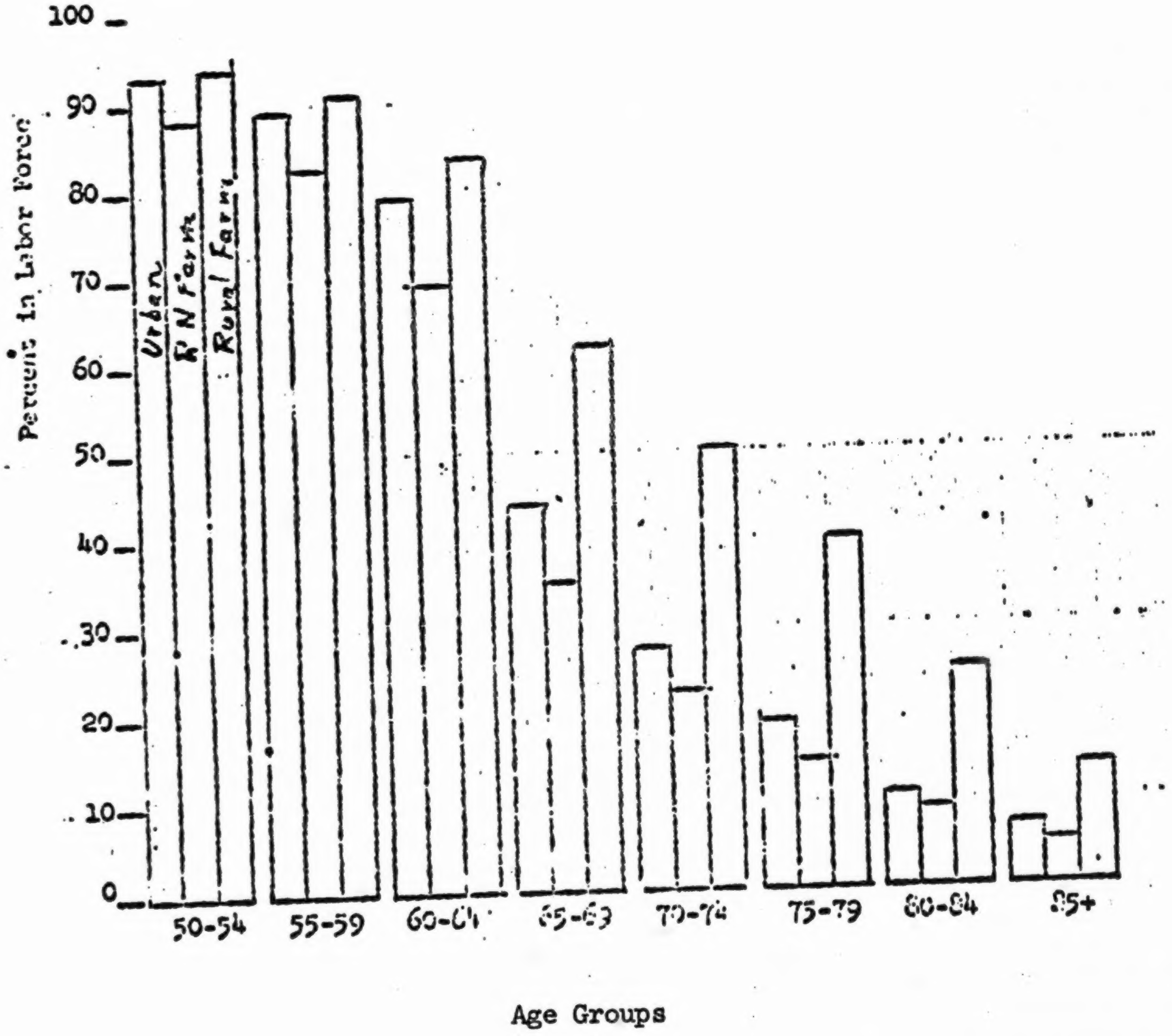


Fig. 16.1 Labor force participation by 5-year age groups of men 50 and older for three residence classes, U.S., 1960.

Source: (U.S. Census of Population, 1960 PC(1) 1D, U.S. Summary Detail Characteristics, Table 194, pp. 490-96.)

Iowa is an appropriate locale for a study of older workers because a large proportion of the nonmetropolitan male labor force of the state is in the 50-and-older group. The same would apply to Kansas, Nebraska, and the Dakotas and to a lesser extent to Minnesota, Missouri, and Illinois.

Although we did not know for certain, we suspected that changes signifying withdrawal begin to occur as early as age 50. Therefore, we included in the population to be sampled all men 50 and older who could be described as actively engaged in a job. We were essentially correct in this assumption, but some of our analysis suggested that lowering the age of sample eligibility to 45 would have yielded more complete information on withdrawal.

We also expected that withdrawal experiences would not only differ among occupations but that they might vary in communities of different sizes. Therefore, we interviewed in communities of three size groups: 2,500 to 4,999; 5,000 to 7,499; and 7,500 to 9,999 population.

Areas of activity other than work, such as visiting and formal social participation, were included in the interviews, but I will limit my discussion to the data on work.

The two most obvious measures of withdrawal are the measures of time spent on the job--hours per week and weeks per year. Since there are major differences in the degree to which time on the job is fixed by rules, we included questions on various content items which may provide alternative ways of reducing work involvement in cases where individual ability to change the time spent on the job is restricted. Use of the concept disengagement with reference to the work activities of older men assumes that involvement in a job does not remain at a constant level from the beginning to the end of the average individual's career, but fluctuates in a cyclical manner with an increase in involvement during the early years of the career and a tapering off during the later years. A cyclic trend may not describe equally well all occupations or all kinds of work activities. For example, the degree of institutionalization of certain job characteristics, such as the length of the work week, influences the degree of compliance to a cyclic pattern. Some wage or salary workers work a 40-hour week with two weeks of vacation almost from the day they start a full-time job until the day they retire.

GENERAL PICTURE OF STABILITY

The first impression from the data is one of great stability. We were studying men who are well established in their work. The median number of years in their present job was 19, and the median number of job changes since age 40 was only 2. The later end of the career cycle is a period of relative stability, but the degree of stability was somewhat greater than we had anticipated.

Since the study design was longitudinal it included plans to reinterview the sample as frequently as once a year to document all important changes in work roles. Responses in the first set of interviews to questions about changes experienced during the past ten years and anticipated changes over the next five years convinced us that it would not be necessary to reinterview that often. We found, for example, that a majority of men in all five occupational groups had made no changes during the past ten years, nor did they anticipate any changes during the next five years in 9 of 11 elements of their work roles (Table 16.1). The exceptions were the two measures of time spent on the job, but one-third or more reported no change in these.

Table 16.1. Changes in Degree of Labor Force Attachment

	Occupational Group				
Occupational Role	Farmers	Factory Workers	Merchants	Professional Salaried	Professional Self-employed
Hours/week	33.1	32.9	33.5	45.8	33.4
Weeks/year	63.4	32.4	48.4	55.7	50.8
% physical	72.9	80.2	57.5	66.3	82.5
% management	75.3	75.5	63.1	56.7	79.6
% clerical	--	63.6	77.3	26.6	--
% principal	75.2	71.1	61.1	55.7	80.2
Freedom to choose hours/day	93.3	73.7	83.8	75.8	92.9
weeks/year	94.9	77.3	85.8	79.1	94.0
hours of the day	93.0	77.0	85.0	78,8	93.7
% physical	95.6	77.7	85.8	82.5	94.9
clerical & principal % management	95.6	77.7	85.8	82.5	94.9

Data indicate percent of workers making no change in occupational role over 15-year period.

Table 16.2. Median Hours Worked per Week by Occupation and Age Group.

	Age Group						
Occupation Group	50-54	55-59	60-64	65-69	70-74	75+	Total
Farmers	65.8	65.1	60.4	54.5	50.5	50.0	62.1
Factory workers	41.0	40.9	40.8	40.9	42.0	40.5	40.9
Merchants	60.3	60.4	54.8	58.8	48.4	45.2	60.0
Professional salaried	50.9	50.4	49.0	44.7	40.7	44.0	50.2
Professional self-employed	55.4	50.7	45.0	48.3	48.3	45.5	50.2

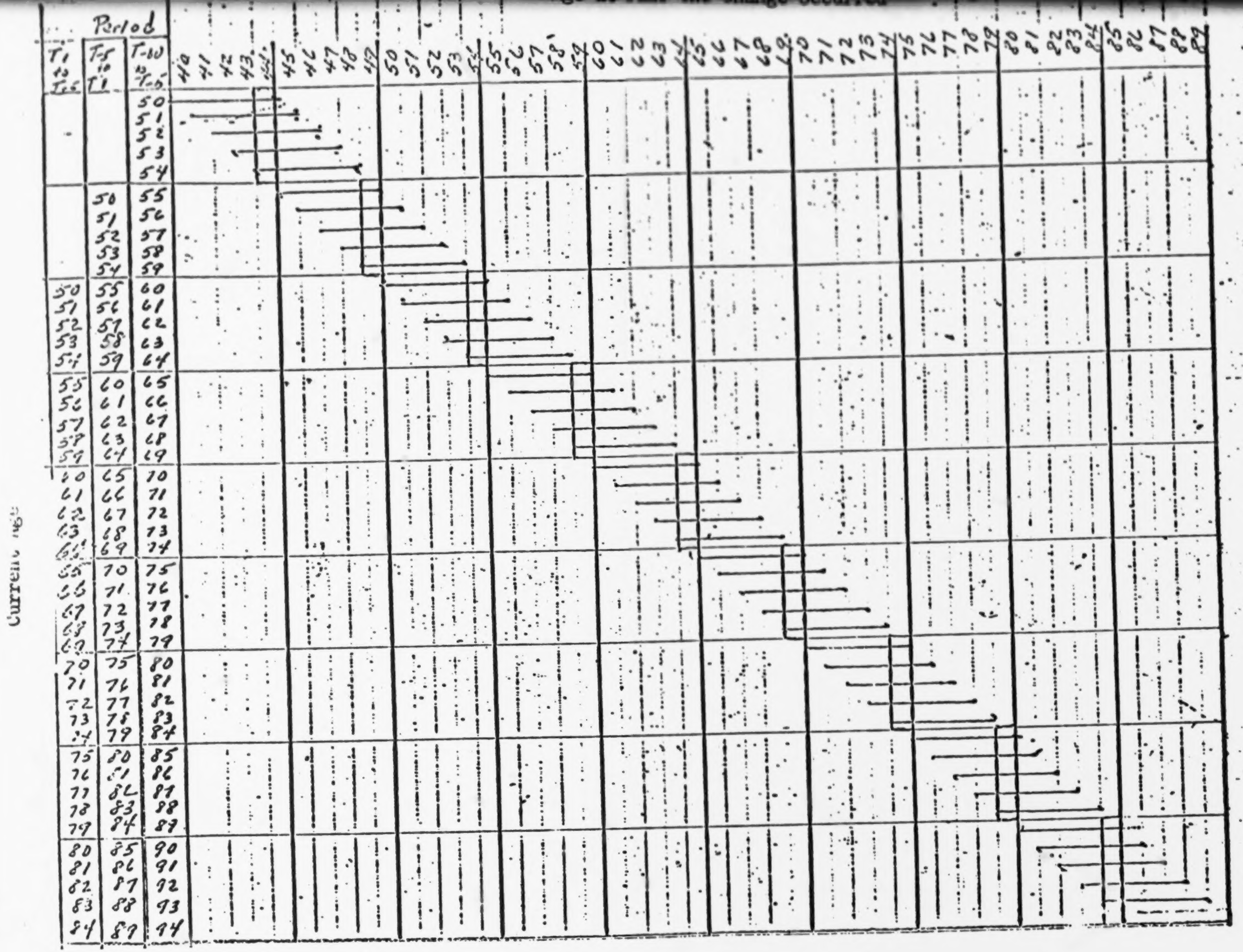


Fig.16.2. Distribution of age at time the change occurred by current age for three periods of time, T-10 to T-5, T-5 to T_1 and T_1 to T+5.

There are three ways of inferring or measuring change over time. The first and most frequently used (because it is the cheapest in terms of data gathering) involves cross-sectional analysis. By comparing simultaneous observations of persons of different ages you make inferences about the association of age with another characteristic. Such inferences, however, assume that differences in a particular characteristic between persons of different ages are predictive of changes that occur in the life cycle of any one person. This may not always be true. It especially may not hold in a study such as the one I am reporting here because of age selectivity in the sampling procedure. Older men who were retired were not included in the sample; thus the older men of our sample are not representative of the total population of men in their age group, and the data reflect this bias. In this case, the bias is in the direction of an underestimate of change. Retired men omitted from the sample had, by definition, reduced their work activities substantially. Thus any evidence of reduction among those still working is most certainly an underestimate of change for the entire age group.

A second method of measuring change involves asking people to recall what changes they have experienced over a specific period of time, and a third is to obtain information from the same sample at different points in time by repeated interviews. We hope to have the latter before this study is completed, but at this point in time we only have the first two kinds of data.

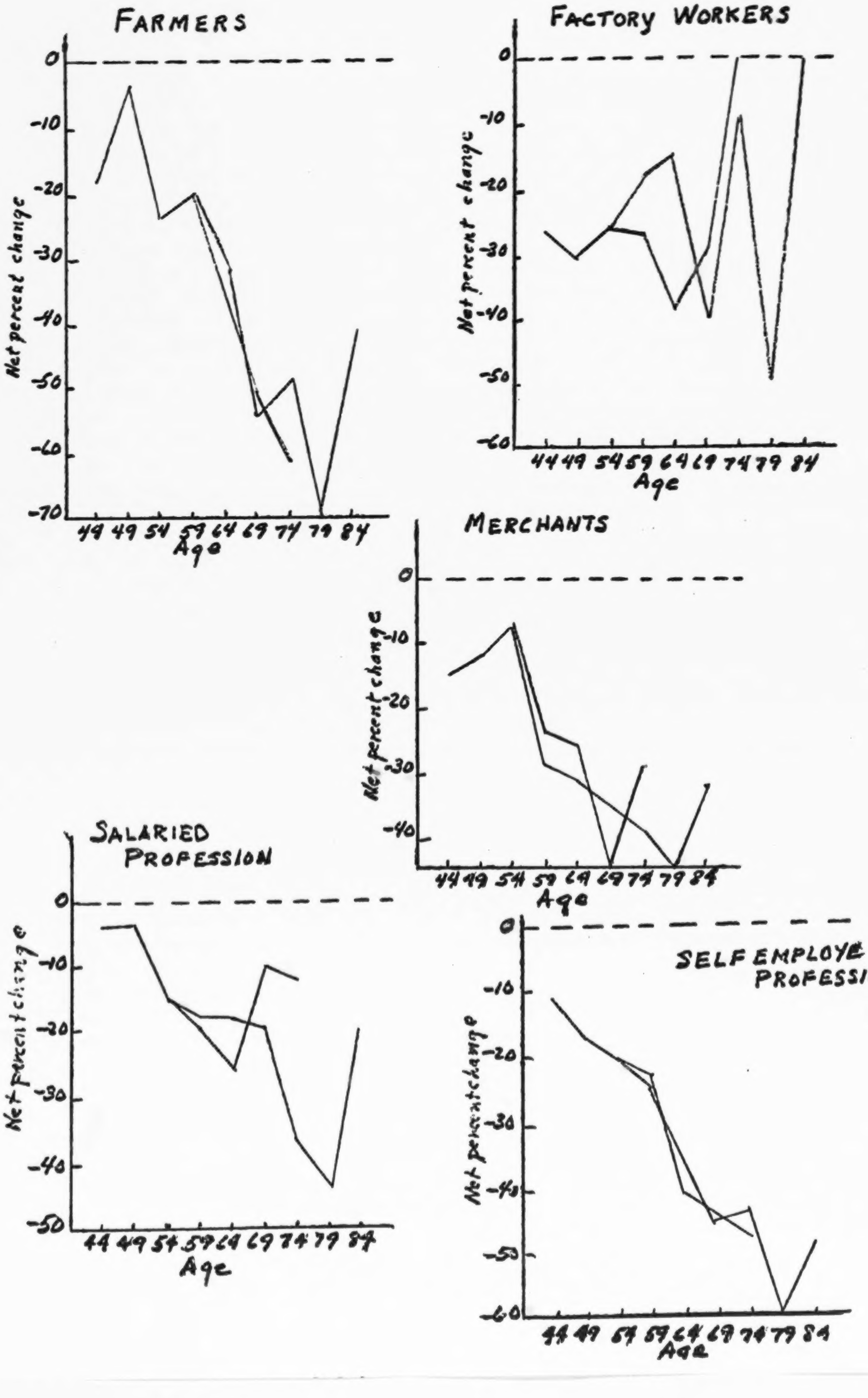
Table 16.2 presents the cross-sectional evidence of change in the number of hours worked per week with advancing age. Note that for all occupational groups except factory workers, the median hours worked per week decreases with advancing age. The stable work week for factory workers is evidence of the high degree of institutionalization of the work week in manufacturing industries.

CHANGE IN HOURS WORKED PER WEEK

By asking about change in hours worked per week during two periods in the past--the past 5 years (T-5 to T_1) and the 5 years prior to that (T-10 to T-5)--and about anticipated change in the next 5 years (T_1 to T+5), we got information about the direction if not the amount of change for three 5-year time periods. We combined the information for each of the three periods in such a way that the data are descriptive of the experiences of all persons in a specific age bracket at the time the change occurred (regardless of present age). To illustrate, responses regarding changes in the period T-5 to T_1 for persons 60-65 years old at the time of the interview describe changes that occurred during the same period in the life cycle for these men as responses regarding changes in the period T-10 to T-5 for persons 64 to 65. These in turn described the same period in the life cycle as responses regarding anticipated change for persons 50-54 years old at the time of the interview. Figure 16.2 shows graphically the manner in which the data for these three periods were combined.

The trend lines in Figure 16.3 represent net proportions of the men in each contrived age group reporting either an increase or a decrease in the hours worked per week. Since for most activities the majority reported no change, the data in Figure 16.3 represent change among the minority that did report a change.

Fig. 16.3 Net proportion changing hours worked per week by direction of the change, by median age at the time the change occured, and by occupation for two time periods, t-10, to T_1 and T-10 to T+5.



Two things can be inferred from these charts. First, the location of trend of lines with reference to the zero or no net change line indicates the direction of general cultural trends; i.e., if all points are below the line this means that the proportions decreasing an activity outweigh the proportion increasing in all age groups. Secondly, the slope of the line from left to right is a rough measure of the rate of withdrawal associated with aging.

The downward slope of trend lines in four of the five charts indicates that the proportions decreasing time on the job increased relative to the proportions increasing time spent on the job as we move from younger to older age groups. This is viewed as evidence of withdrawal and supports the conclusions from the cross-sectional data that men in these four occupational groups do tend to reduce the time spent on the job during a period of time prior to full retirement. Among factory workers, however, there is no evidence of withdrawal either in the cross-sectional data or in the change data presented in Figure 16.3.

The reversal of direction of the trend lines for farmers, merchants, and salaried professionals at age 49 and 54, respectively, is viewed as a rough indication of the average age at which withdrawal begins, or the pivotal point in the cycle of engagement-disengagement.

In all five charts the net proportions are all minuses; i.e., at all ages more men were reducing their work week than were increasing their work week. This suggests the conclusion that a general shift to a shorter week was occurring in these occupations, but since for one occupational group, self-employed professional, there was no reversal or turnaround, had we obtained information on changes that occurred before age 40 for this group the line might have crossed the zero point. Only if we assume that net changes for younger self-employed professional men were also negative can we conclude that a cultural decline has been occurring. Data from the Manpower Report of the President, 1964[2] provide some external evidence on this point, but it is conflicting evidence and the occupational groups do not match our groups very well. Table C-8 on page 255 of this report shows that for production or nonsupervisory workers on the payrolls of selected industries (this is the category most comparable to our factory worker category) the gross annual average hours worked per week during the period 1947-66 increased from 40.4 to 41.4, while the average work week for nonsupervisory workers in retail trade declined from 41.0 to 35.9.

You are perhaps wondering why there are two lines on each of the charts. The double line beginning at age 54 is there because two separate calculations were used in combining the data for the three different 5-year periods. Since there are good reasons for not combining information about what has happened in the past with anticipations of what will happen in the future, one calculation combined only the data for the two recall periods and the other combined the data for all three periods. The shorter line represents the former and the longer line the latter calculation. The discrepancy between them is a rough measure of disagreement between past and anticipated experience.

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[2] U.S. Dept. of Labor Manpower Report of the President, Superintendent of Documents, GPO, Apr. 1967.

The reversal in direction of net change at the upper end of the age scale for each of the four occupations reporting withdrawal suggests the possibility that persons who remain active in occupational roles beyond a certain age (age 79 for these men) are different from the other. Though the net change is still in the direction of less time on the job, the proportion reporting declines decreases relative to the proportion reporting increases after that age.

These men may constitute a group that either cannot afford to retire or that places a very high value on remaining active or both. It also may be that some who find it necessary to continue work to be assured of a living find themselves forced to increase the hours worked to offset declining labor productivity.

WEEKS WORKED PER YEAR

If one wants to reduce his time on the job, an alternative to reducing the number of hours worked per week is to reduce the number of weeks worked per year, i.e., to take more vacation. For self-employed persons decisions regarding how much vacation to take are voluntary, but for wage and salary workers they are limited by company policy. Nevertheless, factory workers may choose to prolong the time between jobs, or the salaried professional may choose not to take some of the vacation he has coming to him or to take another job during his vacation period.

Vacations were least frequent among farmers. A majority (70 percent) of the farmers in our sample said they worked all 52 weeks of the year. Only about half as many (37 percent) merchants took no vacations; and 18 percent of the self-employed professionals, 12 percent of the salaried professionals, and only 10 percent of the factory workers took no vacations.

The proportion taking vacations varied with age, but not on a linear pattern. The trend in proportions of farmers and professional people taking vacations increased between ages 50 and 64 but decreased after age 64 (Table 16.3). This supports the suggestion made earlier that some men who continue to work beyond 65 may do so either out of necessity or a very strong commitment to work. The opposite trends occurred, however, with merchants.

The freedom of factory workers to alter vacation time is apparently restricted in much the same way as their freedom to alter the hours they work per week. As a consequence, older workers were no more likely to take vacations than the younger men. In fact, older factory workers were somewhat less likely to take vacations than younger factory workers.

CHANGE IN WEEKS WORKED PER YEAR

Charts in Figure 16.4 showing the direction of change in weeks worked per year reveal the same contrast between factory workers and the other four occupational groups as were noted in the chart for direction of change in hours worked per week. There is no indication of withdrawal effects among workers in the other occupations. However, if we smooth the curve for data combining the three 5-year periods we get some indication of slope. This suggests that factory workers at least aspire to more vacation time as they get older.

Table 16.3. Proportion of Men Working 52 Weeks per Year by Occupation and Age Group

	Age Group													
	50-54		55-59		60-64		65-69		70-74		75+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Farmers	80	72.1	65	67.0	47	63.5	22	68.8	19	73.1	15	93.8	248	69.7
Factory workers	10	8.3	10	9.3	10	12.0	3	20.0	1	16.7	1	100.0	35	10.5
Merchants	61	37.0	47	35.9	38	42.7	15	33.3	7	36.8	4	25.0	172	37.0
Salaried professional	17	15.7	13	9.8	5	6.1	5	13.9	4	20.0	2	25.0	46	11.9
Self-employed professional	17	18.3	15	16.9	12	14.3	8	17.0	4	20.0	10	26.3	66	17.8

Fig. 16.4. Net proportion changing weeks worked per year by direction of change, by median age at time the change occurred, and by occupation for two time periods, T-10 to T_1 and T-10 to T+5

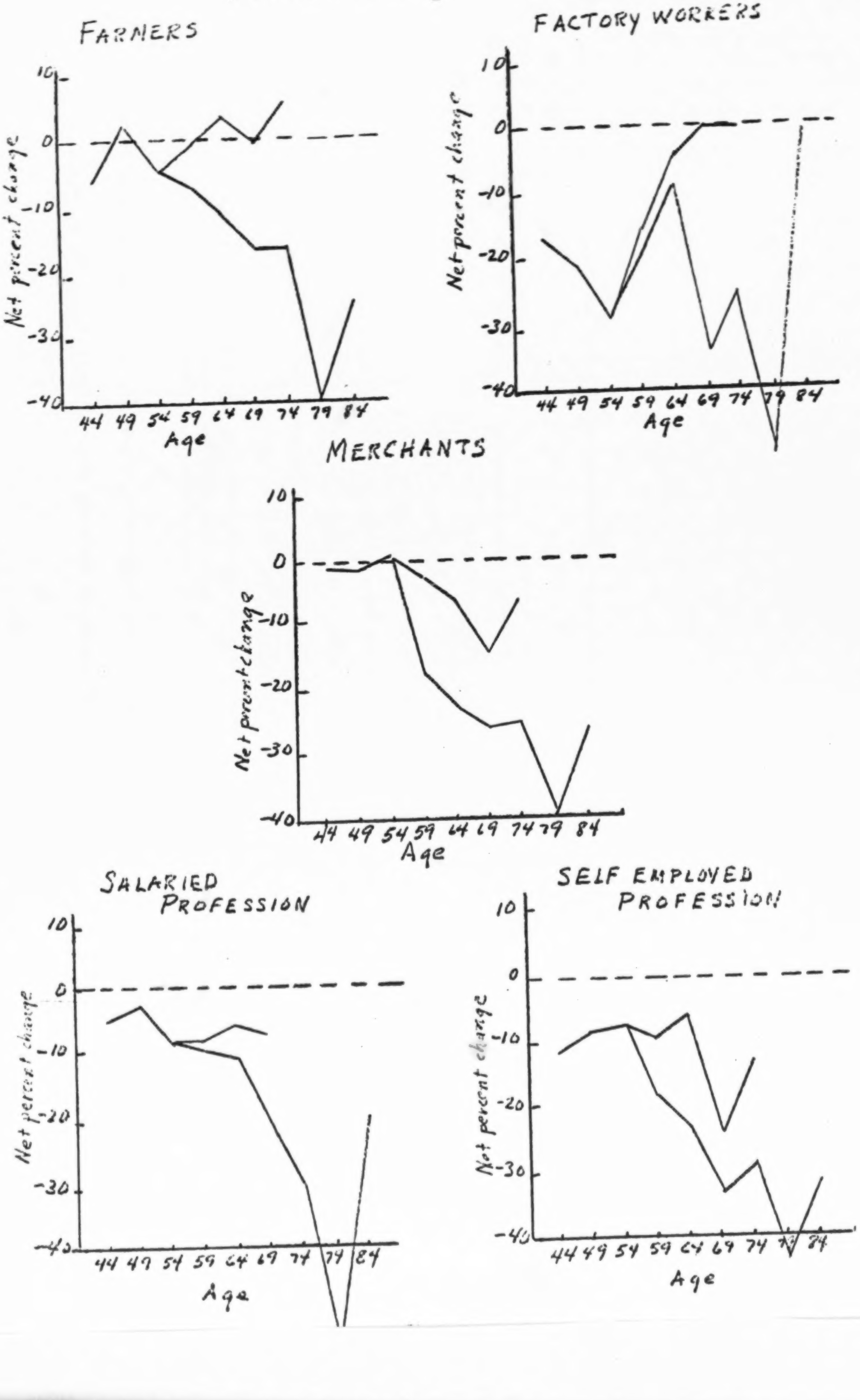


Table 16.4. Median Proportion of Physical Work by Occupation and Age Group.

	Age Group						
	50-54	55-59	60-64	65-69	70-74	75+	Total
Farmers	94.8	95.7	95.1	95.2	95.8	95.7	95.3
Factory workers	99.3	99.2	99.2	99.3	99.4	99.5	99.3
Merchants	51.0	50.9	66.5	33.5	22.5	50.5	50.8
Salaried professionals	10.1	20.0	10.4	17.0	10.8	63.0	10.8
Self-employed professionals	50.0	50.2	49.5	50.2	50.3	50.1	50.1

Generally there is more evidence of disagreement between what has occurred in the past and what is anticipated in the future in the data on change in weeks worked per year than in the data on change in hours worked per week. Specifically more men anticipated a reduction in weeks worked per year (an increase in vacation time) than have experienced such a change in the past. Hope springs eternal! Among farmers, for example, the changes that have been experienced indicate a slight upward trend in the net proportion increasing the number of weeks worked per year, i.e., the opposite of withdrawal has occurred. Addition of anticipatory data, however, produces the expected withdrawal trend.

DIFFERENCES IN NATURE AND COMPOSITION OF WORK ACTIVITIES

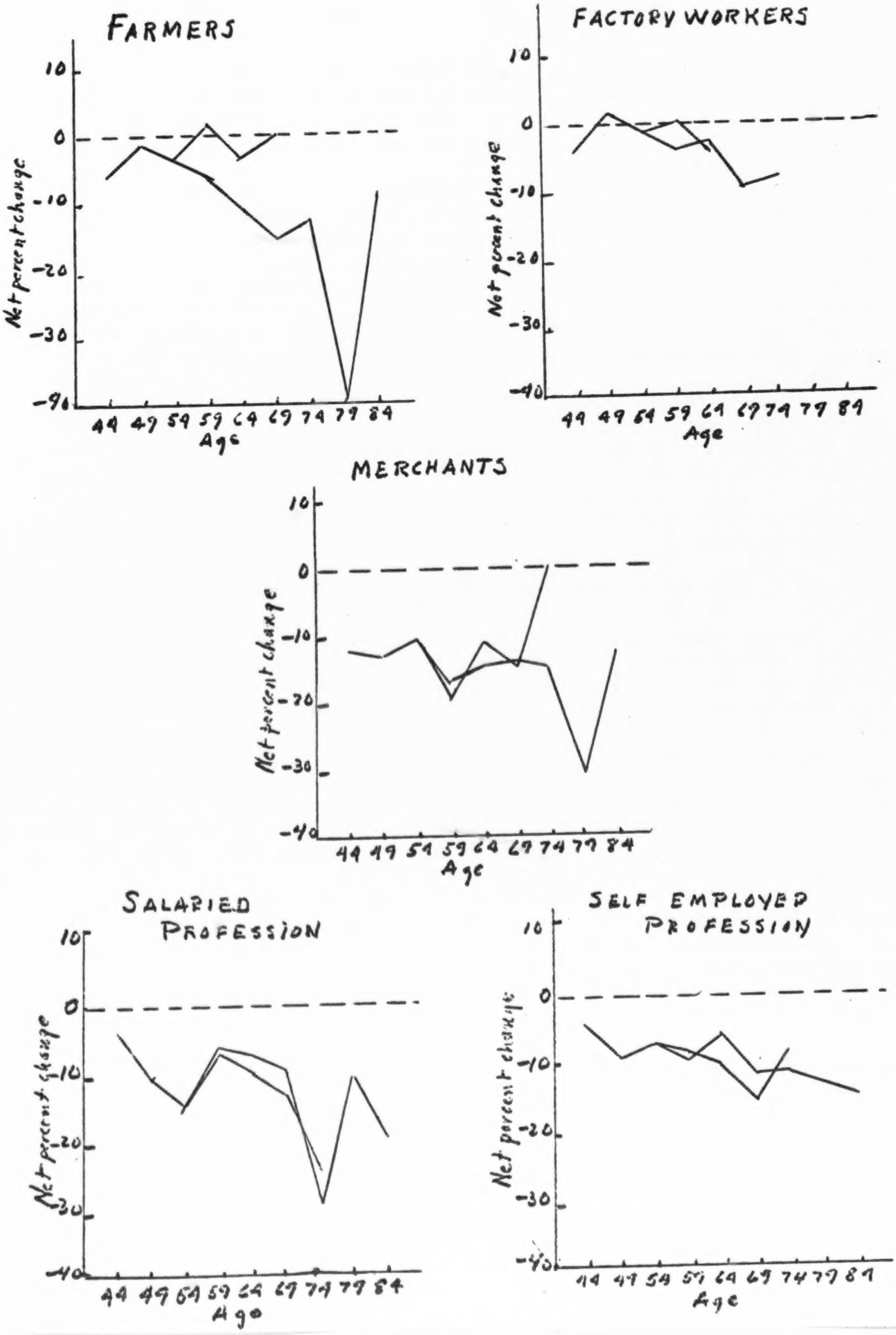
In addition to reducing time on the job, possibilities of adjusting the nature and composition of work activities offer the older workers opportunity to compensate for declining energies. Since physical energy levels tend to decline earlier than mental energy levels, one of the most appropriate of these would be a change in the proportion of work activities that require physical work.

Although there are marked differences between occupational groups in percent of work that was physical, there is little evidence from cross-sectional data that changing the amount of physical work was used to adjust to advancing age (Table 16 .4). As would be expected, the work of factory workers was over 99 percent physical. At the other end of the continuum, salaried professionals reported that only 11 percent of their work was physical. Of some interest is the fact that the work of self-employed professionals was described by the workers themselves as 50 percent physical, almost the same as for merchants (51 percent). The work of farmers was described by this sample of farmers as 95 percent physical.

Since farmers, merchants, and self-employed professionals are all self-employed and presumably have more leeway to alter the content of their work roles than salaried or wage workers, a logical way for men in these groups to adjust to advancing years would be to reduce the amount of physical work done by hiring someone else to do it. The age comparison data for merchants indicate that some of this has occurred, but there is no evidence of it among farmers and self-employed professionals. Apparently older farmers adjust to declining physical energies by reducing their work week rather than by changing the distribution of physical versus nonphysical work. This is not so surprising when we consider that the opportunity to change the mix of physical and nonphysical work is actually quite limited for farmers. Only about 5 percent of all the work performed was defined by farmers as nonphysical, and the opportunity to alter this proportion by hiring labor or using family help under existing conditions is apparently very limited. Furthermore, since many farm tasks require rather special skills developed through years of practice, older farmers may have some reluctance to trust the less experienced help available to perform such tasks.

Similarly, the composition of work activities of self-employed professionals remains constant and appears to offer little opportunity for adjustment as the individual grows older. Among the self-employed only the merchants gave evidence of having any opportunity to vary the proportion of physical work. The fact that the association between age and proportion of physical

Fig. 165. Net proportions changing the percent of their work per year by direction of change, by median age at the time the change occurred, and by occupational group for the two time periods T-10 to T_1 and T-10 to T+5.



work among merchants is somewhat erratic may reflect variations in the content of the merchant role in communities of different size.

CHANGE IN PERCENT OF PHYSICAL WORK

The trend lines in Figure 16.5 suggest that reduction in the proportion of job activities requiring physical exertion is characteristic of older men in all five occupational groups. However, the amount of net change associated with age and therefore indicative of withdrawal is relatively small.

Pivotal points are also very difficult to establish, indicating that withdrawal from physical activities tends to begin earlier in the life of individuals than does withdrawal as measured by time spent on the job. This is especially true for merchants and professional workers. For farmers recall data indicate no withdrawal; in fact, recall data indicate an increase in proportion of physical work with advancing age, but addition of anticipation data suggests that age 49 is the pivotal point. This agrees with the data for both measures of time spent on the job.

The fact that 99 percent of the work of factory workers is physical severely limits their opportunity to adjust the proportions of work that is physical; yet factory workers apparently feel they do have some opportunity to reduce the proportion of their physical work as they get older. Net proportions experiencing or anticipating this opportunity ranged from about 2 percent for 54-year-olds to about 10 percent for those 69 or older.

DIVISION OF WORK ROLES AMONG MANAGEMENT, CLERICAL, AND OTHER ACTIVITIES

Another way to adjust to advancing age is to change the mix of management, record-keeping, and other activities performed in fulfilling the occupational role. Although similar, this is not the same as the division between physical and nonphysical. Cross-sectional comparisons are presented in Table 16.5.

Again it is obvious that factory workers have very limited opportunity to vary the mix of occupational activities. Roughly 99 percent of their time was spent in the principal activity of their job which did not involve record-keeping or decision-making of the management type. Farmers also saw their work as offering very limited opportunity for varying work roles. On the average they defined only about 9 percent of their activities as management or clerical, and these proportions were remarkably stable throughout the age range.

Merchants and the professional classes defined their work roles as including more management and record-keeping activities, but age group comparisons indicate no systematic change in the mix of these activities in the work role as the men get older.

Change in percent of work that is management, clerical, or principal

Figures 16.6, 16.7, and 16.8 should be considered together. Questions were asked about changes in the proportional division of all activities into one of the three categories: management, clerical, and other.

Table 16.5. Median Proportion of Work That Is Management, Clerical or Other Activities, by Occupational and Age Group

		Age Group						
		50-54	55-59	60-64	65-69	70-74	75+	Total
Farmer:	management	5.9	5.5	5.8	5.4	5.7	5.6	5.7
	clerical	2.8	3.2	3.3	2.9	3.0	2.7	2.9
	other	90.5	90.9	90.6	93.1	90.1	90.8	90.7
Factory workers:								
	management	0.7	0.6	0.7	0.6	0.6	5.56	0.6
	clerical	0.8	0.8	0.8	0.7	0.5	0.5	0.8
	other	99.2	99.3	99.2	99.4	99.4	95.5	99.2
Merchants:								
	management	25.8	25.6	25.4	30.5	40.5	20.5	25.7
	clerical	8.0	10.4	10.4	10.4	10.5	5.8	10.2
	other	60.2	57.5	65.2	60.1	50.3	75.2	60.2
Salaried professional:								
	management	20.2	20.6	20.1	25.0	15.3	32.0	20.3
	clerical	10.6	10.4	10.2	10.8	17.0	5.5	10.5
	other	67.0	64.0	70.3	50.8	45.0	75.5	65.3
Self-employed professional:								
	management	10.3	10.4	10.1	10.2	10.3	10.4	10.3
	clerical	5.1	10.0	5.4	10.1	10.7	5.6	5.9
	other	80.7	80.7	85.6	80.6	80.4	80.3	80.7

Therefore, the proportion of activities in one category is a function of the proportion in the other two.

Division of work activities into management, clerical, and other was based on the assumption that the careers of some men form a cyclical pattern of involvement in management versus other roles. This is illustrated by a theoretical model known as the agricultural ladder, at one time popular among agricultural economists. This model held that a typical career sequence for farmers involved a gradual increase in the management role and a corresponding decrease in other activities through the various sequential steps in a farming career, from hired-man status which has little or no management responsibility through the tenant-farmer stage to the owner-operator stage and finally to landlord stage which is predominately a management role. It is not hard to imagine a similar process for merchants and perhaps to a lesser extent for self-employed professionals. This hypothetical pattern assumes an age-related pattern of change in personal preferences for different occupational roles and, therefore, would be most evident in the career patterns of self-employed persons. The organization of work roles in the job situations for wage or salaried workers, factory workers, and salaried professionals allows less personal freedom of choice, but since individuals in wage and salary positions reflect the same personal and cultural urges that produce such a cyclical pattern, institutional arrangements may reflect some recognition of it.

Clerical work was included on the assumption that it provides an alternative to the principal activity which may have some attraction for the older person, particularly if the principal activity involves strenuous physical exertion. It may even constitute a substitute for the management role where institutional regulations severely limit opportunity to expand the management role.

The responses of farmers appear to give little support to the assumption basic to the agricultural ladder model (Fig. 16.6). Trend lines for recall data certainly do not support it; in fact they indicate a slight decline in management involvement with advancing age. Only when the combined recall and anticipation data are considered is there any evidence of a shift to greater management involvement in the later years. This disagreement between recall of actual experience and anticipation of future adjustment suggests a conflict between cultural expectations and social reality for farmers.

There is no evidence that clerical activities in any way substitute for management among farmers. Trend lines for involvement in clerical activities show even less slope than do trend lines for involvement in management activities (Fig. 16.7).

There is even less evidence of a shift to increased proportions of management activities in the occupational roles of the other two self-employed groups, merchants and self-employed professionals. In fact trend lines indicate a decrease in management activities and either a decrease or no change in clerical activities with advancing age with a compensating increase in other activities.

Among wage and salary workers, factory workers see their job situations as providing some opportunity to increase decision-making or management activities and record-keeping as they get older with a corresponding decrease in other activities. On the other hand, salaried professionals see their work situations as involving the opposite type of shift. In fact the pattern of change in the distribution of work in these three types of activities for factory workers more closely resembles the pattern for farmers than that of salaried professionals, suggesting that the important variable here is not self-employment versus salary or wage work but something else, such as the division of the occupational role into management and other activities.

It will be recalled that farmers and factory workers compared to the other groups perceived their work roles as including very small proportions of management activities. Yet farmers and factory workers were more likely than the others to perceive their jobs as allowing an increase in management with advancing age.

FREEDOM OF CHOICE IN DETERMINING AMOUNT AND CONTENT OF WORK ACTIVITIES

Variation in freedom of choice in how long one works, what hours one works, and the distribution of work time among various types of activities is primarily associated with self-employment versus salary or wage work. However, it was anticipated that other factors such as contact with and relationships to the public would influence freedom of choice to an extent that variations would occur among both self-employed and salaried or wage workers. These variations, where they exist, offer additional opportunity to adjust work activities as one gets older.

As was expected, from 95 to 100 percent of the self-employed said they either had complete freedom or had some freedom of determination on each of the five points on which they were questioned (Table 16.6). The proportions did not vary significantly among items, thus indicating that freedom of choice is a generalized factor which applies more or less equally to all the choices included in the series.

A majority of factory workers (between 80 and 90 percent, depending on the item) said they had no freedom of choice on any of the five items. Salaried professionals, on the other hand, expressed considerable freedom of choice, and the amount of freedom varied from item to item. With regard to the percent of work that was physical; the division between management, clerical, and other activities; and the number of hours worked per day, the proportions of salaried professionals expressing complete or some freedom of choice closely approached the corresponding proportions for self-employed persons. With regard to weeks worked per year and which hours of the day worked, however, salaried professionals were more like the factory workers than like the self-employed.

CHANGE IN FREEDOM TO DETERMINE CONTENT AND AMOUNT OF OCCUPATIONAL ACTIVITIES

Questions concerning changes in freedom of choice were asked for each of the five items. Apparently it was not necessary to ask about each item separately. Differences from item to item in trend lines for each occupational group were so slight as to be either imperceptible or barely perceptible. Also, interoccupational group differences in patterns were remarkably consistent from one item to another. Therefore only one set of charts, that for changes in freedom to determine the hours worked per day, is presented (Fig. 16 .9).

Fig. 166. Net proportions changing the percent of their work that is management by direction of change, by median age at the time the change occurred and by occupation for the two time periods T-10 to T_1 and T-10 to T+5.

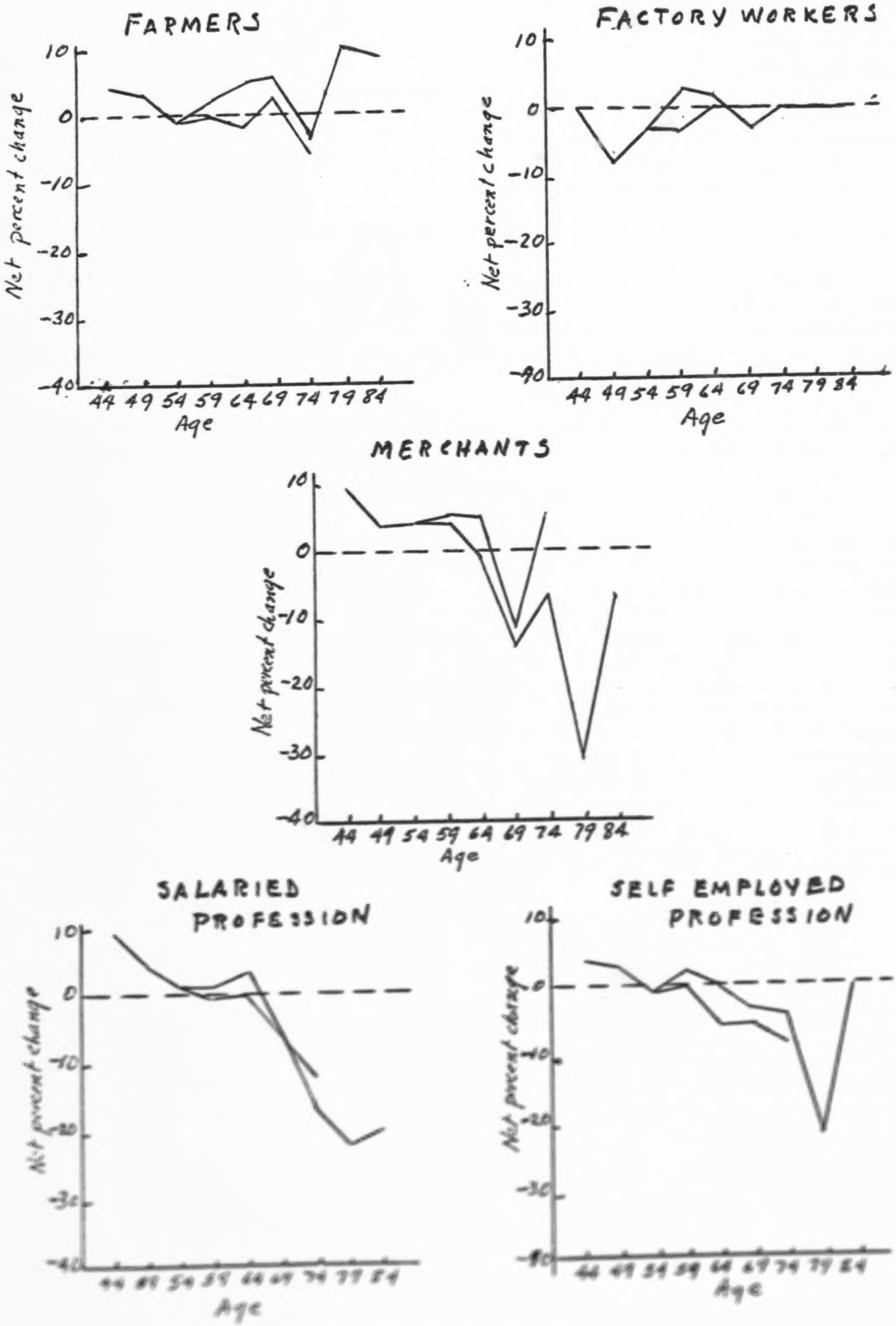


Fig. 167. Net proportions changing the percent of their work that is clerical by the direction of change, by median age at the time the change occurred and by occupation for two time periods, T-10 to T_1 and T-10 to T+5.

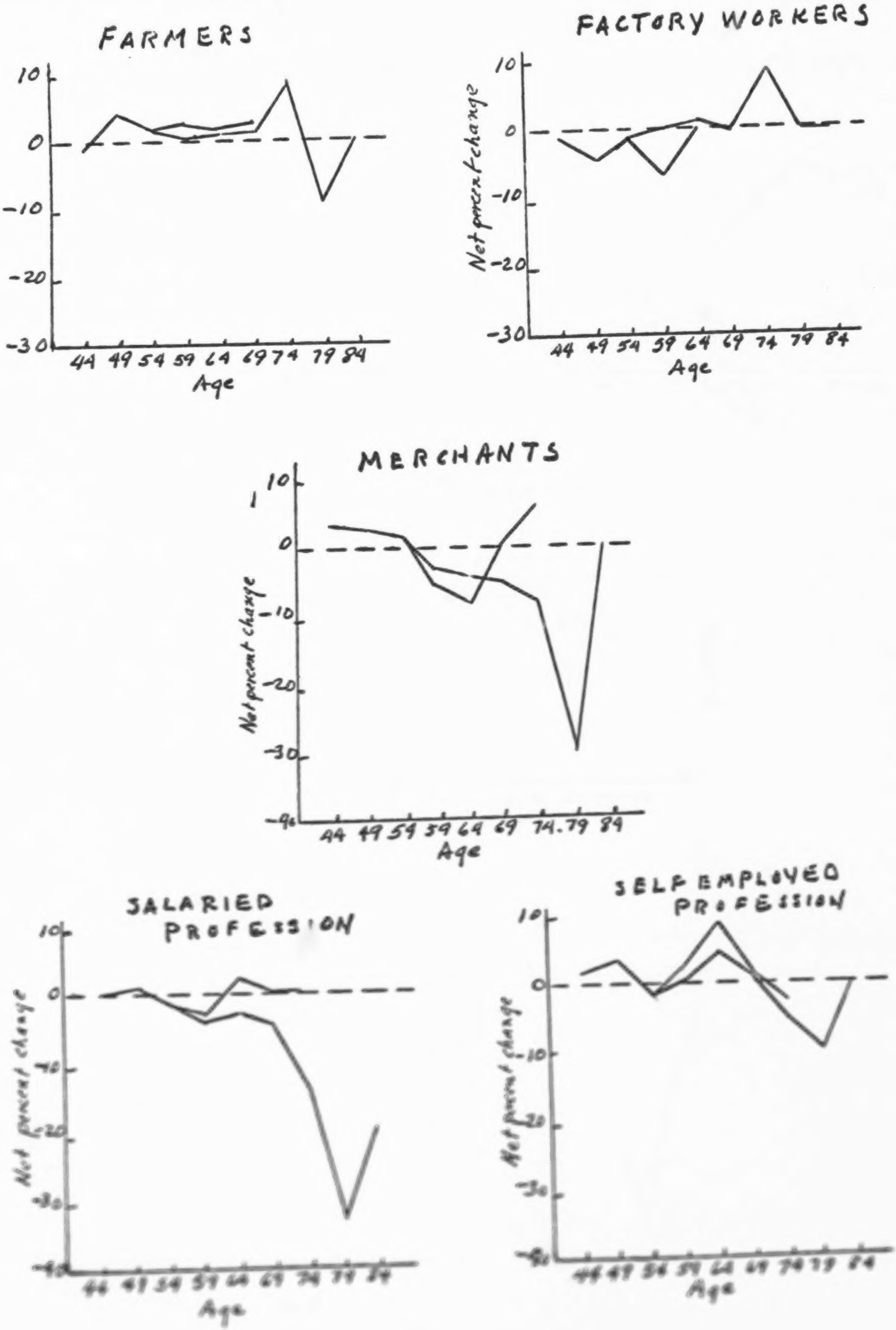


Fig. 16.8. Net proportions changing the percent of their work that is other or principal activity by direction of change, by median age at the time the change occurred, and by occupation for two time periods, T-10 to T_1 and T-10 to T+5.

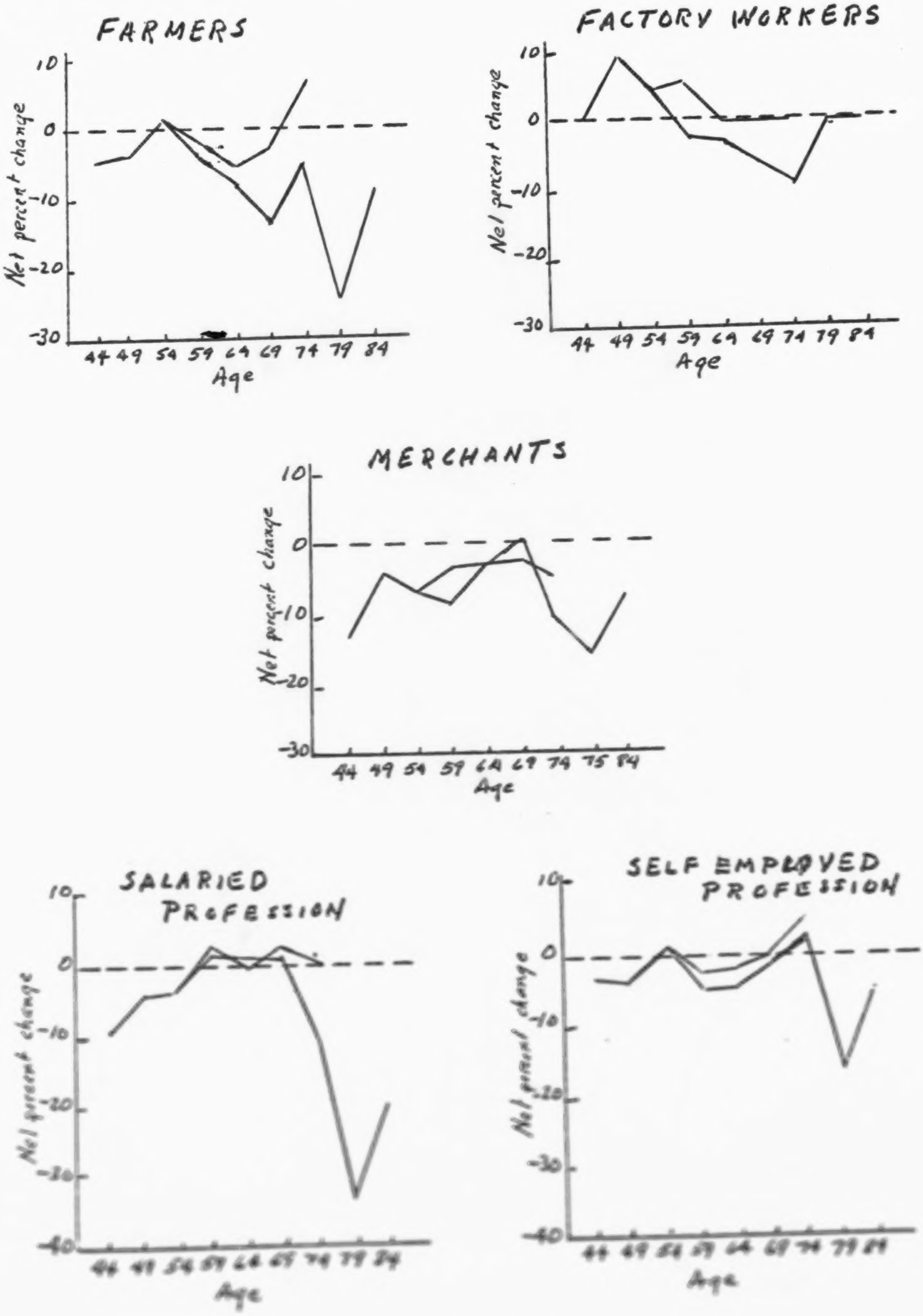
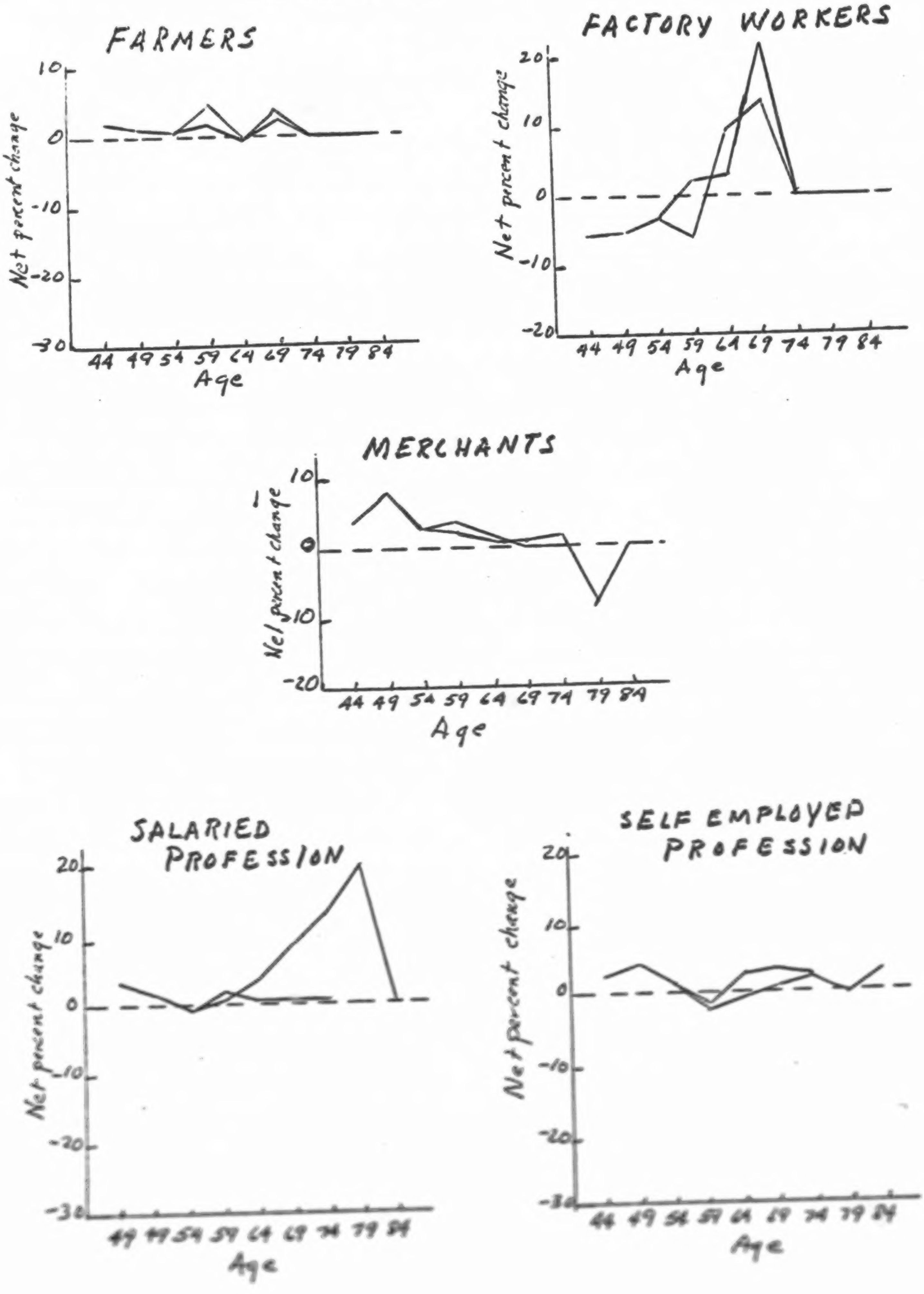


Table 16.6. Proportions Reporting Complete, Some, or No Freedom To Determine Various Characteristics of Work Activities by Occupational Group

	Occupational Group				
Activity and Degree of Freedom	Farmers	Factory Workers	Merchants	Salaried Professional	Self-employed Professionals
Hours/day					
complete	85	5	85	44	85
some	15	12	14	42	14
none	0	83	1	14	1
total	100	100	100	100	100
Weeks/year					
complete	87	4	87	22	89
some	12	10	12	39	10
none	1	86	1	39	1
total	100	100	100	100	100
Which hours of day					
complete	86	5	86	33	84
some	14	11	12	42	14
none	0	84	1	25	2
total	100	100	100	100	100
Percent physical					
complete	87	5	87	53	87
some	11	11	11	34	11
none	2	84	2	13	2
total	100	100	100	100	100
Percent management, clerical or other					
complete	88	5	89	53	89
some	11	9	10	36	10
none	1	86	1	11	1
total	100	100	100	100	100

Fig. 16.9. Net proportions experiencing change in the hours worked per day, by direction of the change, by median age at the time the change occurred, and by occupation for the two time periods, T-10 to T_1 and T-10 to T+5.



Trend lines for farmers and self-employed professionals display no consistent slope but tend to remain just above the zero line throughout the age scale. This indicates that all men regardless of age in these occupations perceive freedom of choice to be increasing over time.

For the other self-employed category, merchants, the predominant response is also one of optimism; i.e., more perceived increases than perceived decreases in freedom of choice, but in this case net increases declined with advancing age. This suggests the influence of another variable which is also associated with age. Many merchants, particularly in the smaller communities of the state, are confronted with a combination of declining clientele and nonliquid assets which forces them to adopt a practice of retiring the business coincidentally with retiring the person. The consequent need to conserve declining resources forces adjustments on the proprietor which constitute real infringement on his freedom of choice regarding the content of his work roles.

The wage and salaried categories share a common pattern of increase in freedom of choice with advancing age, particularly as perceived in the future. In these occupational groups, work roles include, by definition the least degree of freedom of choice. Nevertheless, aging is perceived as being associated with an increase in freedom. Among factory workers the trend line is essentially the same whether the data are for past experience only or include anticipation of future experience; but for salaried professionals increasing freedom with age is reflected only in responses regarding anticipated change. Recall of past experience does not provide any basis for expecting such an increase. This discrepancy between expectation and reality leads to the speculation that in responding to questions about future change the salaried professional may be holding on to an illusion that age will bring some of the prerequisite inherent in the position of the self-employed professional person--a dream of independence which never materializes.

Thus we see that adjustments occurring in the latter half of the career cycle are many and varied. We have looked only at changes in work roles. Although the general picture is one of great stability, changes are occurring, and on balance these changes indicate that older men tend to reduce their level of work activities as they approach retirement age and that the rate of reduction tends to increase with age.

It is also apparent that some adjustments such as shifting from physical to nonphysical tasks do not occur as might be expected because of limitations on the individual freedom to accomplish such shifts.

We have not answered the basic question of whether changes occurring in the later part of the career cycle are best described as disengagement or substitution. To do this requires consideration of changes in other than work activities, such as family tasks, visiting, and participation in community affairs, which offer logical substitutes for occupational activities. Preliminary analysis of direction of change in these activities relative to change in work activities does not provide conclusive evidence either way. Apparently disengagement and substitution of one kind of activity for another occur simultaneously among older men such as these studied. More conclusive evidence as to which is the predominant pattern must await the collection of longitudinal data.

Chapter 17

Automation and the Modern Worker: The Office As a New Type of Mass Production Factory

Jack Siegman

In the last decade or so we have seen the beginnings of a new type of factory system. This system, office automation, has emerged from within white-collar industries and has many of the characteristics normally associated with mass production factories. In addition, this new form of machine innovation, computer technology, is not to be seen as an alien force suddenly introduced into the routines of white-collar office work. Rather, white-collar automation is the result of a long series of machine innovations which had already altered traditional office work so that computerization represents the continued and systematic applications of mechanized production into a social system so structured as to allow for its entry without major dislocations in the work process. In effect, this means that large white-collar office systems have been operating as factories in social structure for a considerable time, and that automating many of the work procedures has made visible this factory structure in addition to further developing it.

By a factory type of organization, I mean a social system of work which has been so rationalized that each worker performs a specific task or set of tasks interdependently with others so that in combination they all contribute in a rapid and efficient manner to the production of a finished item. Work under such conditions is standardized

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and routinized so that the operator performs the same series of operations in varying degrees of regularity. In sum, the office factory system creates a body of semiskilled workers who are easily trained and whose work, because of its simplicity and regularity of operations, is easily mechanized.

This is the model which has emerged with the rapid growth of large-scale bureaucratic organizations, both public and private, in recent decades. As large complex organizations continue their growth in our economy, we have seen a concomitant growth in a labor force which is directly tied to its operation. Computerization in effect represents a more complex, technological rationalization of office work procedures which, over time, had become increasingly burdensome as they grew in size, scope, and importance.

Let me at this point discuss some of the implications and results of white-collar automation from a study I conducted in a civil service bureaucracy which reflects some of the conditions found in other white-collar factories.[1] I wish to emphasize primarily the nature of work and its consequences for the worker, and incidentally the organizational ramifications of computer technology.

David Reissman, in his introduction to Eli Chinoy's book, Automobile Workers and the American Dream, asked "Whether other factory's workers are like automobile workers...whether women, who have fewer hopes to start with and far less pressure for achievement, may not find factory work more liberating than men to."[2] This question is highly relevant in that in my study and in other studies of white-collar offices it is found that females are the most numerous employees in office work. In my study, something like 90 percent of all nonsupervisory workers were female, the largest concentration of which were in the least skilled category - keypunch workers and other auxiliary workers. This is rather interesting in that the structure of the skill hierarchy was such that females were predominantly concentrated in the lower skilled jobs (key punchers and clerks) while the males were to be found only in the higher skilled ones (systems analysts, programmers, and tabulators). This occupational distribution was primarily based on the sex of the worker. No difference was found across all occupations with respect to previous academic and business education. Those in the most skilled category, males, had no higher educational attainment than those persons, females, in the least skilled category.

The general trend, in this as in other studies, indicates that over the years, as office work has become more machine-based, males entered this predominantly female work arena as new occupations emerged and were given priority in these skilled jobs. Thus we found that from a once female-dominated work force, which was related to a simple technology, office work became increasingly male-dominated as the newer occupations and the supervisory staffs were associated with a computer industry which was male-based. As technology has advanced into office work, mobility opportunities for females have declined. Complex technological specialties have always, in our society, been sex linked. The newer computer related occupations, even though found in the office setting, indicate that this trend has not changed very much. Now instead of females working as clerks in large computerized offices, they serve primarily as low-level machine operators which call for little skill and knowledge.

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[1] Jack Siegman, White Collar Automation: A Study in Technological and Social Change, Unpublished Ph.D. Dissertation, University of Illinois, 1967.

[2] E. Chinoy, Automobile Workers and the American Dream (Garden City, N.Y.: Doubleday and Company, 1955), xx.

As mentioned previously, no differences were found in all computer related occupations with respect of previous academic achievements; however, there were differences in the types of training different occupations were given. In effect, it was the job assignment which determined the type of training one received, and these differences in training were the major differentiating factor in this distribution of skills. Those least skilled - the keypunch operators and the auxiliary machine operators - learned their jobs through the experience of directly working at their tasks. For these jobs it was a matter of only a short time in which the knack of operating the keyboard coupled with the simple memorization of the punching code was learned. Only when we get to the tabulating and programming groups, again male-based, do we find formal school machine training supplied by the organization. The length of time of training people for these skilled occupations varied from six months to over a year, whereas the length of time for the lower skilled occupations, the keypunch operators, was from two weeks to a month or two.

All of these occupations are directly related to a mass production service, from those who punch the cards to those who assemble them into a final product. All the procedures in this white-collar factory are mechanical in nature rather than administrative, and this has more in common with the industrial work system than the traditional office work system.

VARIETY IN WORK

One of the consequences of mechanized operations is that work becomes routinized and standardized to fit the structure of a machine. In addition, in a mass production system not only are tasks routinized but they are highly regularized and repetitive. Thus as operations are standardized and simplified, the variety of tasks decreases and the problem of monotony increases. In a computerized office, the largest bulk of employees perform in a routinized manner as in any other production line system. And as in other factory systems, the further the task is away from the line, the less controlled is the work and hence the greater variety.[3] Thus only in nonstandardized tasks do we find a meaningful variety in work. For the others, task repetition is the major characteristic of the job. In computerized work, programmed activities are essential for the maintenance of operations, and hence, even greater standardization occurs in the computerized setting than in many other mass production factories.

Related to the character of a task is the amount of attention that is needed on the job. Walker and Guest in their study of the automobile assembly line draw the distinction between surface mental attention in which "the worker can perform automatically or without thinking and thus be able to turn inward to his own thoughts or carry on a conversation with his fellow workers" and those types of jobs which entail what they call "mental absorption."[4] They also state that jobs which are unskilled and repetitive and can be carried on with little mental attention are "less fatiguing than those which are without special skill but require a high degree of mental attention without accompanying mental absorption."[5] What they are saying is that the man on the assembly line whose work is typically simple and repetitious can escape from the inherent dullness of his job either by revery or by conversation with others without its affecting his performance. This, however, is not the case in office automation, especially with the low skilled keypunch operators who, because of the nature of the task, must pay constant attention to task because of the high money/time cost of errors. Key punching is not automatic in the sense of being machine guided or controlled; hence, there are no safeguards for error except those supplied by human attentiveness, and this operates as a great strain factor upon the keypunch operator. The repetitious nature of the work without mental absorption leads directly to states of revery. Hence there was found a constant concern by these lower level operators not to let their minds wander, since the job entailed only surface mental attention. On this point, in a count of breaks that workers took off their jobs, keypunch operators took on an average three times as many breaks as those working in the more skilled jobs. Break time operated here as a mechanism to escape the tensions and boredom associated with such task systems.

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[3] See the works of, E. Goffman, *Asylums* (Garden City, New York: Doubleday and Company, Anchor Books, 1961), 31; R. C. Walker and R. H. Guest, *The Man on the Assembly Line* (Cambridge, Mass.: Harvard University Press, 1952).

This problem was not found in the tabulating and computer operations since a different type of attention was called for in their tasks. In these operations the machines do the actual work while the operators are involved in the planning of the procedures. Here the work was more complex and less repetitive and demanded a greater mental absorption in following each part through and relating it to other tasks.

It was also found that the nature of the tasks and the division of labor operated to isolate the punchers from each other, while for the more skilled personnel, their work created an immediate functional dependency. While punchers typically worked as isolated individuals at their separate desks, the other workers (tabulators, auxiliary machine operators, programmers, etc.) typically worked as parts of teams. As a consequence, the more skilled persons knew each other's work quite well but only a few of the key punchers did so. The difference between the two structures of work was such that in the more skilled sections there was an air of informality and greater interaction and mutual help while in the lower skilled sections formality and regimen pervaded.

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[4] .... and Guest, Op. Cit., 14.

[5] Ibid.

USE OF ABILITIES

Given these characteristics of work in an automated office, let me now turn to an examination of the types of attributes needed to perform these activities. How much opportunity does the mechanized office allow for an expression and development of abilities in the tasks that serve to meet organizational goals. What does such an organization demand of its employees, and what opportunities does it allow for self-expression in work?

In response to a set of questions probing this topic, more than two-thirds of the key punchers said that their job was too simple for any use of their abilities. The major reason for this feeling was answered in terms of the work being either repetitious, preplanned, or too rigid. The contrast between the ideology associated with computer systems and the actual work duties of key punching led to an interesting response by one puncher who stated, "To me the IBM system is what it says - Think - but as far as they are concerned you are not supposed to think. You do what you are told and that is it." This and other comments exemplify the conflict between the demands of management and the computer system and the desires of workers for meaningfulness and autonomy in work. The greater the preplanned use of mechanical operations, the greater the insistence upon conformity to programmed behaviors. These demands of the job do not lead to any new learning, nor to problem solving, nor to the gaining of any insight into the work itself. Once the puncher learns the work and the codes associated with the task, all she has to do is recall it over and over again. The major requisite for the job is the passive memorization of codes of operations and concentrating on their proper applications. This programmed type of activities does not call for anything but a standardized performance. In contrast and in varying degrees, those who worked in the more skilled tasks were found to be more satisfied in that they viewed their job as a challenge to their abilities. With regard to the use of abilities at work, it would seem that the type of organization, factory, or office is less important than the nature of the division of labor and the specialties within it. As tasks are increasingly rationalized and mechanized, the opportunity for lower level employees to learn or to use and develop any special abilities decreases. With the breakdown of tasks into simple, repetitive, and standardized procedures, the worker is almost powerless to use any ability except that which is called for by the standardized procedures.

We can then ask what kinds of satisfactions or dissatisfactions persons feel under these types of task conditions. While all of the skilled workers listed such attributes as autonomy, challenge, and variety as giving them great satisfaction in work, over 40 percent of the keypunchers stated no satisfaction with work.

A sample of the punchers' comments reflecting some dissatisfactions were, "I just accept it. It's not something that I really would like to do." "It's all so routine, it's nothing special. Well, I start at 8:30 and go home at 5:30, I don't really care what I do in between." In these responses there is little evidence of any involvement or enjoyment with work, nor any significant commitment to it. Very few of them perceived their jobs in terms of any intrinsic value for them, and for many it was a place to spend eight hours a day and earn an income so that other more important activities of life could be pursued.

When we look at the responses of the more skilled personnel--programmers and tabulators--we notice a change in the direction of emphasizing the intrinsic qualities of the job itself. That which was related to high satisfaction on their part was the opportunity to develop their own work routines and to become involved in the problem-solving character of their task. Thus when this group was questioned about dissatisfactions in work, there were very few negative responses; whereas for the keypunchers, nearly all listed the boredom and monotony of their tasks. The punchers were in constant battle with their tasks not with respect to lack of challenge but rather against the stultifying effects.

JOB IMPORTANCE

Given the distribution of the types of skills in a computerized office, and given the distribution of the use of abilities and the satisfactions and dissatisfactions among the personnel, one would expect a similar distribution in the attitude of these employees toward their feelings of job importance. However, the data did not show this to be the case. When asked about their feelings of job importance, most of the employees both semiskilled and skilled, felt that the jobs they performed were important. The two major criteria of job importance as viewed by the employees were: (1) the responsibility of public service oriented employment (this was a civil service bureaucracy) and (2) the importance of each job for the total system.

Thus it was not the job per se but rather the interdependence of all tasks and the service given to the public that made for job importance. The essentiality that these people felt, both to the public and to others in related tasks, give weight to Durkheim's notion of organic solidarity: that is, the individual's feeling of importance and the meaningfulness of his work come not only from the specific tasks performed but also from its relationship to the whole of which it is a part. Even though intrinsically the job may be meaningless for the person, the organization in which he is involved gives it greater social meaning and responsibility. Performing for and with others gives a sense of social purpose and worthiness to jobs which otherwise have little intrinsic meaning or satisfaction.

However, this is not the whole story. In addition to finding out how important a job is in general, we must ask also how important the job is to the person. The data so far indicate that for most persons, and especially those in lower level occupations, the job is important in terms of its function for others. Very few of the lower level workers spoke of their jobs in terms of its positive functions for themselves as individuals.

Is this social reward factor, the social relatedness to other tasks and to clients, more overriding than the personal rewards persons do or do not receive from their jobs? Other data indicate that irrespective of job importance to the social system, whether it be internal or external, if individual rewards are not available, this social reward factor is not strong enough to maintain interest in remaining in the system. Even though most of the punchers felt that their job was important, they still had the highest quit rate. The social or system relatedness factor was not a strong enough reward to keep these persons in their jobs. In an interdependent organization, all jobs are important if the system is to function; however, its functional importance does not override the lack of satisfaction and rewards that one finds in lower level mass production type jobs. As Walker, Chinoy, and others who have studied the automobile industry have shown, heavy labor turnover is highly correlated with mass production jobs. This seems to be the case in all mass production systems, office and factory alike.

In the present study, when sex was controlled, the mean number of years of employment for skilled females (these were the few programmers and tabulators) was 12.5 as contrasted to a means of three years for the keypunchers. In an analysis of past records, there was found an average attrition rate of over 25 percent a year in the lower level skilled section, and these figures are comparable to other mass production type industries. David Reissman's question as to whether women may find factory work more liberating than men is answered negatively in this case.

As a solution to this high turnover rate, the management of this organization initiated a program with the local high school whereby senior girls could work part time and learn to punch. As soon as they graduated, they were offered jobs as punchers. Many of the younger punchers received their jobs in this manner.

Though this section had an almost complete turnover in personnel every four years, this did not hold for one small group of workers, the older persons. For them, their commitment to job was related to their lack of any other marketable skill and to the years invested in a retirement pension. Their commitment was to the organization and its rewards and not to the job itself. Hence the little rewards of such lower level work in the office factory system lead to a high rate of attrition and great mobility out of the organization. Only a relatively few of these lower level workers would choose to remain in their present jobs if they had a choice. The question was asked of all of them: "If you had a choice, would you prefer to remain where you are or have another job in this organization or in another organization?" The only workers who chose to remain in their jobs were the older workers; all others chose other occupations or other organizations.

In summary, office work no longer applies to a set of traditional skills associated with administration but is more closely akin to a mass production type of factory system. Such factors as educational requirements, type of training, nature of the work, and task performed are more occupationally related to a mechanized mass production industry than that which we normally call an office. In contrast, and again in comparison to other mass production industries, in the computer-based office systems we find even severer strains emerging in lower level occupations. For example, in the automobile assembly line, the control of the worker is mechanical in nature; the worker must follow the speed of the belt, and there is no human authority standing over him to see if he has performed a certain number of tasks in a specified time period. However, since there is no such mechanical control system for lower level occupations in the computerized system, control is enforced by supervisors. Given the high cost of errors and the lack of a self-correcting mechanical device, the authority or control system associated with the lower level work tends to be far more rigid, and greater insistence is placed upon strict conformity to operations than in other mechanized mass production industries. It is here that we find a high level of tension and a high level of alienation among these workers as they are faced with their position of powerlessness. Their powerlessness in this sense is reflected by the fact that they must conform to highly standardized operations, primarily because an error in computer operations is much more difficult to find than in previous hand-type operations or tabulating operations.

In addition, with the simplification and break-down of office tasks into keypunching and other types of semiskilled occupations, we found that these workers knew very little about the nature of the tasks of the unit in general. They knew almost nothing about the work they performed except that after they finished punching it went on to another unit where other work on it was done. Relevant to this we found a constant demand for meaningfulness in work on the part of these workers--meaningfulness that could not be met by the structure of an organization that operated under a computer technology. Hence powerlessness and meaninglessness emerge under conditions of office work as it becomes more mechanized.

We also found that as mechanization and computerization emerge in the office, the status of office work declines. The status loss occurs both within and without the organization. As work becomes more mechanical and less hand-based there is a decline in status primarily associated with the fact that there is less mental involvement than ever before because the work is programmed. These kinds of tasks take on the character of blue-collar work in terms of being dirty, mechanical, at times heavy, and always very noisy. The same attributes we find typically in other kinds of factories are now being introduced in the computerized office.

What has happened is that the computerized office is no longer an office but basically a factory, and another attribute of factorization is the lack of or severe truncation of that which we call a career. If we define a career very broadly as a set of steps starting at the bottom with a low degree of expertise and moving gradually up to more skilled positions with increasing status, authority, and autonomy, then there is no career for the keypunch operator as for most assembly line workers. Over a number of years, if they last that long, there is a series of pay increases within rank but no promotion into higher skilled work. This in effect is the "career" pattern of such type operatives. Because of these factors, in addition to the characteristics of the work, it is very difficult for such organizations to maintain a stable supply of workers.

What has happened then is that as office work organizations have become more rational (and I use the term in a technical not philosophical sense), i.e., efficient, we are creating the same set of conditions that occurred 75 to 100 years ago when the factory system developed in industrial nations. With it come the rewards of increased productivity, but can we bypass the human costs associated with its development?

V. Methodology and Research Needs

Dr. Charles Holt discusses the importance of efficiently matching workers and jobs so as to reduce the unemployment and inflation levels an economy must endure. He believes that in order to achieve this goal we need more basic research on the relationships for predicting worker productivity and job satisfaction, as well as for predicting the probabilities of getting job offers and job acceptances.

The second paper in this section is written by Dr. Joseph Morton and it examines the current population survey as an excellant source of data for the manpower researcher since it can be used to supply microdata. However, due to economic constraints all the current population survey data cannot be published, so what is now needed is an information storage and retrieval system incorporating all the desired microdata.

The third paper, written by John Goltman, discusses the functions of the Division of Allied Health Manpower including its grant programs, its projections of national needs in the allied health occupation personnel. He also examines the recent Public Health Service changes undertaken to attain a more efficient utilization and more effective production of health personnel.

Arnie Solem's paper puts foward a listing of manpower research needs. These needs include defining the characteristics of the disadvantaged and developing new methods for bringing people to the point of employability. The author also recommends the establishment of a manpower research center in every employment security region so that our manpower structure can be made into a manpower system.

The final paper in this book is authored by David Knuti and discusses manpower research from the point of view of the Office of Economic Opportunity. It lists research needs which include determining the results of various mixes in different manpower programs, studying what constitutes employability, investigating the extent and types of industry training opportunities, and developing modified research tools for the manpower field in general.

Chapter 18

How Helpful Can Computers Be in the Search for Jobs and Employees?

Charles C. Holt

This paper will sketch in broad terms a very complex and important problem which is at the center of the labor market, and suggest some ways in which we might be able to formalize this problem in order to make use of a great deal of information for the purpose of matching jobs and workers. We will argue that this is such a complex area that we need all the help we can get and that electronic computers have a tremendous contribution to make.

Indéed pioneering applications have already been made, but we will suggest that a much more ambitious approach is warranted.[1]

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[1] For references to past work in this area and for a technical development of the approach discussed here see Charles C. Holt and George P. Huber, "A Computer Aided Approach to Employment Service Placement and Counseling," Firm and Market Workshop Paper 6609, Social Systems Research Institute, University of Wisconsin, Madison, July 1967.

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IMPORTANCE OF MATCHING WORKERS AND JOBS

Before we get into the question of how we might better match individual jobs and workers, I would like to indicate some of the reasons this area is of crucial importance. Economic analysis is often carried out in terms of the demand for and supply of standardized products or productive resources. Unfortunately the assumption of standardized workers and standardized jobs clearly is not applicable to the labor market. An analysis of the market's operation shows that no two people and no two jobs are really the same. The simplifying assumption of homogeneity which helps the economist to analyze broad changes in supply and demand forces does not apply to the problem of deciding what job to take or what man to hire. For answering questions of this type it is more useful to make the opposite assumption that no two people are the same and no two jobs are the same. We need a framework in which we can deal with these differences because they are of decisive importance in determining what jobs will actually be offered and accepted.

An emphasis on job and worker differences immediately raises the problem of how to search the opportunities available to the workers and the employer in the market. Economists often ignore the problem of obtaining the information needed for decisions, but if every job is a complex bundle of pains and satisfactions, a great deal of information is needed to make job decisions. Getting this information is a resource- and time-consuming activity. An unemployed worker going to a company usually has relatively little knowledge about what job opportunities it will offer. It may take a day or two to investigate the possibilities at one company, but prior to making this investigation, it may be a random guess as to whether or not the firm will offer something of interest. Considerable job variability will likely result in a great deal of essentially blind random search in the process of finding out precisely what jobs are available. Of course, the better the initial information, the less random the search.

A similar argument applies to the employer. Companies engage in a search to find and select workers to fill their particular job vacancies.

An automated information processing system is needed by workers and employers that can deal with large amounts of very specific information so that much of the search can be done economically by machine rather than by people. Computers should be able both to reduce costs and to improve the quality of worker-vacancy matching.

COSTS OF UNEMPLOYMENT, VACANCIES, AND INFLATION

When an important variable like the number of workers that are unemployed is considered, there is a tendency to think about two kinds of people--those who have jobs and those who do not. However, in more dynamic terms, the condition of being unemployed is clearly a transitional state that everybody goes through at one time or another. Since time is consumed in the process of searching the market for a suitable job and since there is a continual flow of people through the market, a certain number of people will always be unemployed. Clearly there are many social and economic reasons for wanting to reduce the number of people in the unemployed state. Unemployment for the worker is costly in terms of lost income, and it can be a psychologically shattering experience to go from company to company and not be wanted. In an extreme case a person unemployed for a long period may lose his skills and deplete his financial and emotional resources.

The corresponding objective from the employer's point of view is the reduction of unfilled job vacancies. In this country we have not had very good data on vacancies and there has been little emphasis on the costs of unfilled vacancies. However, when a company seeks a larger work force than it can recruit, there are costs in terms of lost profit, etc. These costs are intangible opportunity costs which are difficult to estimate but nonetheless are important. Also unfilled job vacancies can incur serious direct costs from the relatively low productivity of unbalanced work teams.

In defining the market search problem we would like to see what can be done to minimize the number of unfilled job vacancies and also minimize the number of unemployed people looking for jobs. There is another dimension to this problem that is important on the level of the national economy. Some research initiated by A. W. Phillips[2] has shown that a relationship exists between the percent unemployment level and the percent rate of change of money wages per period of time. This inflation-unemployment relation is shown in its simplest form in Figure 18.1. Two of our most important national economic policy variables appear to be constrained so that the higher unemployment is, the lower the inflation rate and conversely.

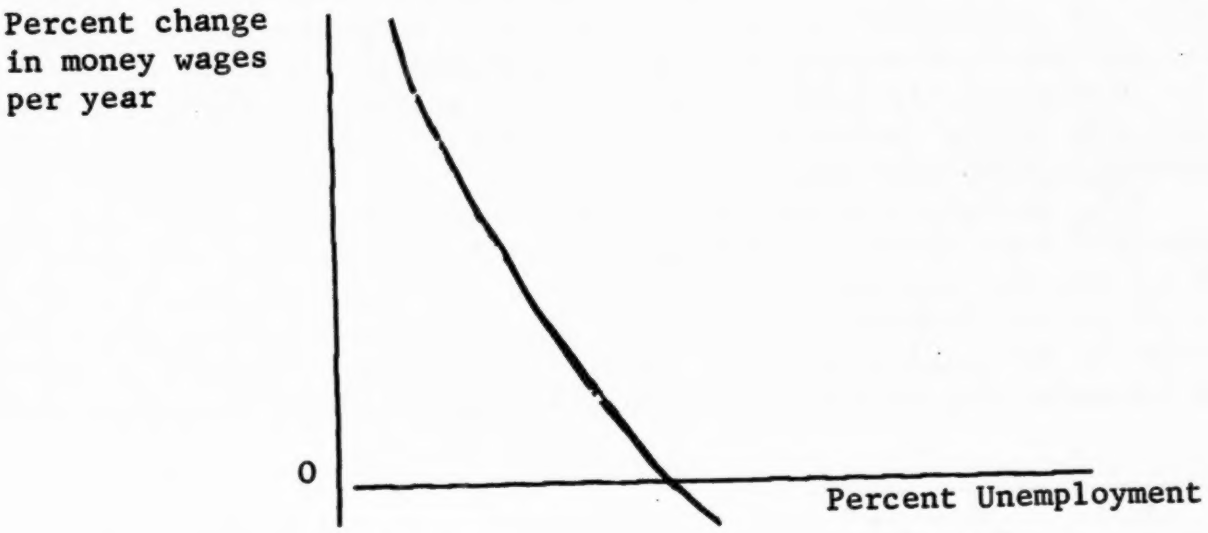

Fig. 18.1. Inflation-unemployment relationship

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[2] A. W. Phillips, "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957," Economica, Nov. 1958, pp. 283-99.

There has been considerable controversy about this relationship, but there now appears to be strong empirical support for its existence[3] and a theoretical explanation that relates it to job search.[4]

For national economic policy, we would like, of course, to avoid both inflation and unemployment, but if indeed there is a relationship between these two variables, then we can only choose the least bad point on the curve. However, there may be no point on this curve that is really acceptable. One point has a low level of unemployment but too much inflation, and another point has a low level of inflation but too much unemployment. The points between may be unacceptable on both counts. There are, of course, temporary dynamic excursions from this long-run static curve.

If this is the way the full employment ceiling operates, then we need to understand the exact determinants of the curve. Indeed should we not like any point on the curve from the policy point of view, then the next question is what can we do to move it to the left so that we can reduce both inflation and unemployment. Some theoretical work[4] has suggested that the movement of the Phillips curve can be related to improvements in the efficiency of the search process in the labor market in matching unemployed workers and job vacancies for interviews and ultimate placements. This is another reason for seeking the aid of electronic computers in improving the efficiency of labor market search.

TENDENCY TOWARD ROUTINE COMPUTER APPLICATIONS

If we look critically at the search process, we see that it is at the center of the operation of the labor market. How is this critical search process performed now? Workers ask friends, read want ads, contact employment services, and ring the doorbells of various companies. The employers list their vacancies with employment services, advertise, ask their employees for references, and interview applicants at the gate. Typically the worker fills out an application form with perhaps a dozen pieces of information about his education, work experience, etc. Seldom does the employer supply equivalent information about particular jobs.

In most of the work going on now in seeking to apply electronic computers to the search problem, employment services are simply automating existing manual systems.

This is very similar to the way corporations usually have introduced computers into their operations. Often they have used the computer in a way to get the minimum payoff instead of the maximum payoff. They have tended to put computers on those highly routine jobs that were done by clerks in accounting, payroll, etc. The principal impact of introducing the computer was to displace some clerical help and often not even to reduce costs significantly. There has been relatively little impact on the important decisions of the firm. We fear that much of the work that is going on now in applying electronic computers by various employment services may have similar insignificant results. We are just going to substitute the machine search of job and worker files for manual search and not really change significantly the performance of the system.

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[3] George L. Perry, Unemployment, Money Wages and Inflation, M.I.T. Press, Cambridge, Mass., 1966.

[4] Charles C. Holt, "Job Search, Phillips' Wage Relation and Union Influence, Theory and Evidence," Firm and Market Workshop Paper 6705, Social Systems Research Institute, University of Wisconsin, Madision, Dec. 14, 1967.

The approach that our research group at Wisconsin has taken is to define the job search problem in much more ambitious terms.

REEXAMINATION OF SEARCH PROBLEM TO ACHIEVE MAXIMUM CONTRIBUTION OF COMPUTER

We are taking a fresh look at the search process from the point of view of the worker and from the point of view of the employer to see what they are trying to accomplish and to see how much the computer can help in reaching their objectives. A basic research effort on this problem has resulted in a technical paper[5] which is the basis for this more general exposition.

First it should be understood that the final decision as to who is going to take what job is going to be made by people and _not_ by machine. No American employment service, public or private, is in a position to play God and allocate the jobs and workers. At most, employment services can allocate interviews, transmit information selectively, and counsel workers and employers. There is no prospect that this job would be done entirely by machine. It is simply posing the wrong question to ask whether the job should be done by man _or_ machine. The relevant question is: What is the best allocation of work between man and machine? We should seek a team play; some things men can do better and some things the computer can do better. The problem is not one of absolute substitution but rather of finding the appropriate division of labor.

One of the undesirable characteristics of our present employment services is an unconscious orientation of the search process toward one party or another. For example, in the public employment service in the United States, the employer's information is entered on a "job order form." The words used here are probably significant; the companies put in "orders" for employees. The information on the worker is entered on an "application form"; the worker is a supplicant for help. Although this should not be overstressed, there is a tendency for the employment service to serve employers by helping them find workers. Of course they are trying to help workers find jobs too, but there is a bias in that they record and file a great deal more information about the job that the worker is interested in.

The tendency to bias the search process toward one side of the market leads to an unduly simple view of the file search that the computer should execute. The search process should not be viewed as parallel to the simple airline reservation system in which the question is asked, "Do you have a seat on flight X on a certain date?" and the computer searches its files for the answer.

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[5] Holt and Huber, _op. cit._

This approach to the search problem will tend to flood the "best" jobs with worker applicants and flood the "best" workers with job offers. This is not good for the neglected workers and jobs, and the best workers and jobs will be forced in self-defense to avoid such an undiscriminating employment "service." Stepping up such a search process to electronic speed could actually reduce the performance of the system by "more efficiently" overloading the most attractive vacancies and workers.

There are two very different aspects of the search process that need to be handled jointly. A placement is much like a marriage. The worker is looking for certain things in a job to maximize his satisfaction, and this is quite apart from the employer's concern for finding a worker with maximum productivity. Only if both of these parties satisfy their different objectives will an offer be made and accepted and the happy marriage of a placement occur. When you analyze this search process from the points of view of the two parties involved, you immediately get involved in the problems of trying to make operational in a form suitable for computer manipulation the concept of job satisfaction from the point of view of the worker and the concept of productivity from the point of view of the employer. This is what the parties are searching for, and if the computer's help is to be relevant, these sticky issues can hardly be avoided.

Since interviews are extremely costly, we will want to put a large part of the preliminary search on the computer. Often the worker finds himself giving the same information about himself both orally and in writing to company after company. There would be a clear increase in efficiency if this information could be given once to a central machine-readable file which could be searched electronically. If a worker is to make an intelligent choice among job alternatives, he needs a great deal of information about the jobs. Rather than supply a detailed job description to many different candidates, the employer could submit this information once to a central computerized file where it would be used for screening. Later the information on jobs and workers can be selectively disseminated to workers and employers in connection with interviews.

With fairly complete information in the file on the workers' qualifications and preferences and the employers' requirements and inducements, the computer has the necessary information to simulate a hypothetical interview and predict its outcome. Hopefully the computer can screen out of consideration those interviews that are not likely to result in offers or acceptances and thereby enable the people involved to concentrate on interviews that are likely to be promising.

PREDICTING SATISFACTIONS AND PRODUCTIVITIES

This approach to the search process requires us to be able to make predictions about job offers and job acceptances for possible worker-job pairings. Presumably the probabilities of offers and acceptances depend on "worker satisfaction" which is kind of a catchall utility measure for all of the things that the worker is interested in and "productivity" which is a similar catchall for all of the things that the employer is interested in. Computer search will depend on quantitative estimates of these variables. Obtaining such estimates is not a trivial task.

One approach is to make empirical studies of the variables that influence the probabilities of job offers and acceptances. Such behavioral relations could be estimated by regression analysis of data on actual interviews and placements. You can easily make a long list of things that influence worker satisfaction: wage, pension, incentives, promotion opportunities, fringe benefits, overtime, job security, vacations, distance from home, etc. More research has certainly gone into the area of predicting productivity than has gone into predicting worker satisfaction, but to date the results have not been very encouraging. Often we have succeeded in predicting something like only 30 percent of the variance.

One can easily visualize a job-worker match in which the worker productivity is so high that the probability would be great that the company would offer him a job, but the worker might be so dissatisfied with the job that he would almost certainly turn it down. In such a case it would be a waste of time to schedule an interview. It is clear that to make a placement you have to have both a job offer and an acceptance, so the probability of a placement is equal to the probability of a job offer multiplied by the probability of an acceptance (if these are independent events). We do not want to belabor this mathematical formalism, but the point is that to make a placement you must be concerned simultaneously with acceptances by workers and offers by employers. Since the probability of an offer depends on productivity and the probability of acceptance depends upon satisfaction, a computer, to be effective in suggesting that some interviews are likely to be more productive than others, must somehow cope with these concepts, difficult as they are. Thus we are faced with very difficult social science prediction problems that cannot be solved easily.

Fortunately a relatively modest ability to make forecasts can result in a great improvement in search efficiency. Because of the difficulty in predicting how satisfied a person will be with a job and how productive a person will be in a job, it is quite obvious that there are going to be severe limitations on our ability to find relationships that make good predictions. However, we need to remember that at most we are allocating interviews, not assigning people!

If we look at this problem of finding a job from a personal point of view, we would probably like to have somebody line up half a dozen jobs that satisfy our specifications with prospective employers that would be seriously interested in us. It would be worth both our time and the employers' time to schedule such interviews. If each individual had half a dozen good job prospects and each job vacancy had half a dozen good candidates, job placement could be quite efficient. Then the people involved could afford to spend more time on interviews in depth to cover the more subtle considerations that could not be handled by computer.

SEARCH BREADTH AND DEPTH

An important tradeoff needs to be considered early in designing a computer matching system that inevitably will involve a certain amount of random search. When seeking candidates to be interviewed for a particular job, a cursory examination can be made of a great many candidates or with the same computer cost a much more thorough analysis can be made of a smaller number of candidates. Alternative approaches can be analyzed in terms of the number of candidates screened per interview recommended and the accuracy of the prediction that is made of the quality of each of the job-worker matches analyzed.

The results of rigouous analyses that are presented by Taylor and Russel[6] and in Appendix A can be generalized and summarized as follows. The quality of a worker-job match might be measured in terms of the probability of a placement, of its duration, and of the satisfaction and productivity outcomes. Such an index of quality could be measured after an interview and placement, but could only be estimated imperfectly at the time of the screening. Clearly the more accurately the potential quality of a match could be foreseen, the higher the quality matches that would be recommended for interview. The correlation between the prediction of quality and the actual quality outcome proves to be a relevant measure of the accuracy of prediction. This is shown on Figure 18.2 in which the higher the correlation R, the higher the quality of interviews for a given breadth of search.

If only a few candidates are screened for interviews, the chances are reduced of finding an extremely good worker-job match. For any given accuracy of prediction, the wider the search (i.e., the larger the number of candidates screened per interview), the higher the quality of the recommended matches. This is shown by the positive slope of the curves in Figure 18.2.

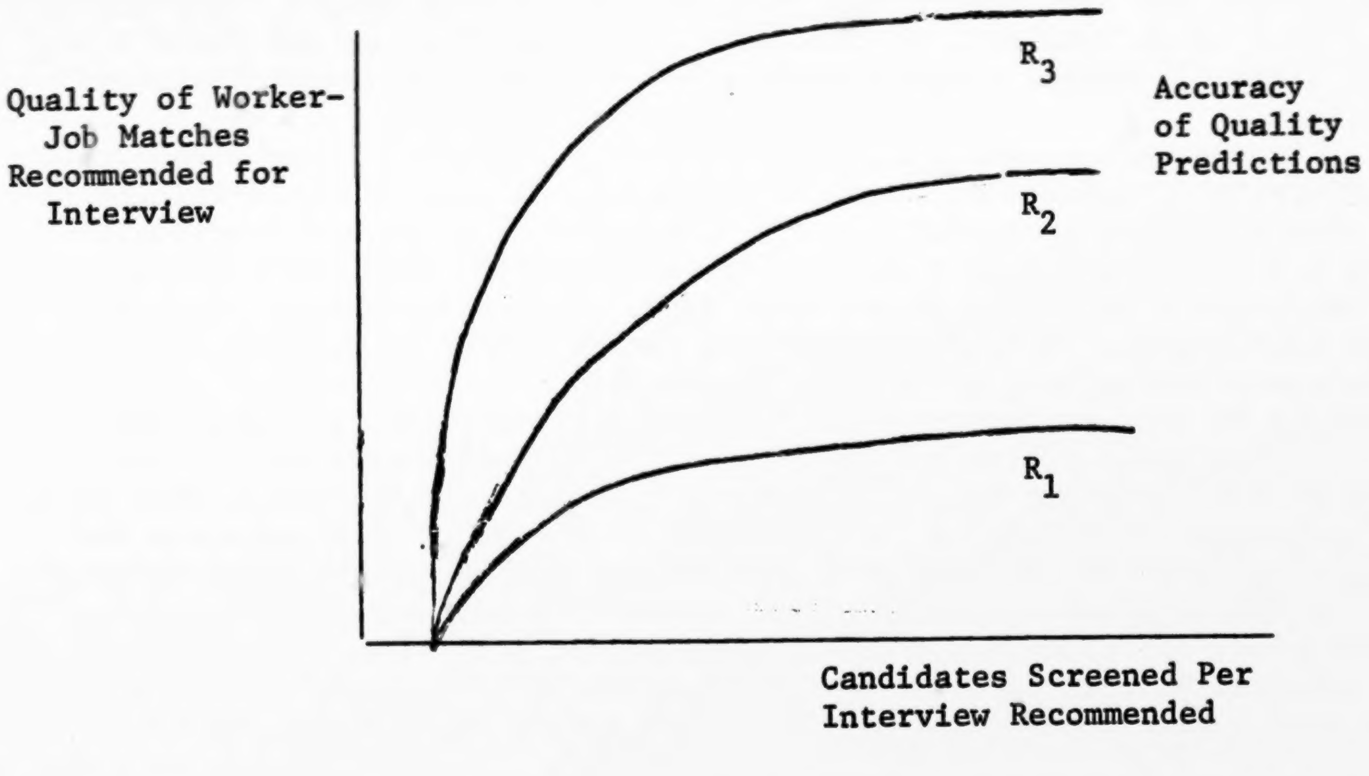

Fig. 18.2. Dependancy of worker-job match quality on breadth of screening and accuracy of prediction.

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[6] H. C. Taylor, and J. T. Russel, "The Relationship of Validity Coefficients to the Practical Effectiveness of Tests in Selection: Discussion and Tables," Journal of Applied Psychology, 1939.

As might be anticipated, diminishing returns set in for both dimensions of the search. The wider the search is extended, the smaller is the further incremental increase in match quality. Also as efforts are made to improve the accuracy of predictions by taking into account more variables and by computing more refined analyses, the costs rise sharply of pushing up the correlations of the predictions. Simple relationships involving but a few variables serve well for the important determinants of quality, but increasingly it depends on an ever wider range of relatively less important variables.

It is important to note that a given level of match quality can be obtained either by wide search and crude predictions or by more accurate predictions with narrowed search.

For best results a least-cost balance should be sought between the two alternative ways of improving the quality of the recommendations. To date there has been a strong tendancy to use electronic computers to broaden the screening search. One of the principal contentions of this paper is that the computer has perhaps an even more important potential for deepening the search in the sense of improving the accuracy of the explicit or implicit predictions that are built into the screening system.

PROGRAMMING OF INTERVIEWS

Unfortunately maximizing the quality of candidates for individual jobs does not necessarily give the best overall results.

The criterion that comes first to mind in assigning interviews is to pair those vacancies and workers that "fit" exactly or closely in terms of meeting the specifications of both parties. We illustrate in Figure 18.3 with four workers and four vacancies plotted along a single dimension of "skill." The matching criteria would lead to scheduling interviews for three pairs, 1-B, 2-C and 3-D. If these interviews resulted in placements, one vacancy, A, would be left unfilled and one worker, 4, would be unemployed; but the unemployed worker would be so unsuited to the vacancy that a placement would not be possible.

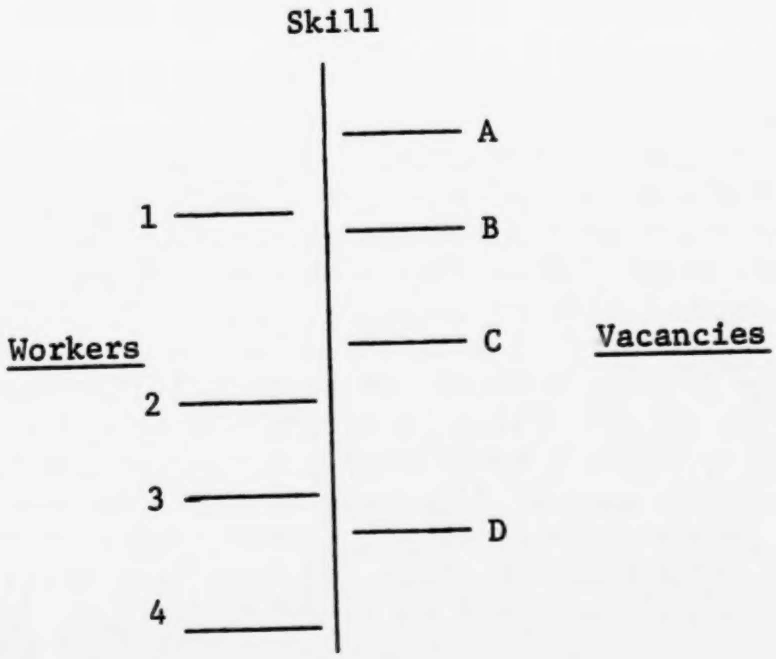

Fig. 18.3. Matching of workers and vacancies.

Viewing the problem of matching in terms of vacancies and workers as a whole rather than seeking individual matches suggests that four interviews, 1-A, 2-B, 3-C, and 4-D, might be better. By "stretching" the workers and "trimming" the job requirements somewhat, a better overall pairing might be obtained that filled all vacancies and employed all workers in this example. In general by accepting some degree of mismatch in individual pairings, it is possible to make more placements. Clearly there are practical limits to such adjustments, but there is the possibility of substantially improving the allocation of interviews. However, the cost is the replacement of a simple individualized matching process with a mathematical programming approach that depends on some aggregate quantitative measure of the quality of proposed pairings.

All this is another way of saying that we face a social allocation problem. How you assign interviews ideally should depend not just on each worker considered alone but also on what other workers are in the market. Now if we do want to pose this as a mathematical programming problem, the question arises as to what social criterion function is going to be optimized. The social welfare function would appear to be maximum when interviews between employers and workers are assigned in such a way that the sum over all jobs and workers of the productivity and satisfaction weighted by the probability that a placement will occur is maximum. To find this maximum would require an examination of each worker hypothetically in all the possible vacancies and in each case estimate the corresponding probabilities of offers and acceptances and the corresponding satisfactions and productivities.

The repetition of this for all unemployed workers in all vacancies in all possible combinations would exhaust the possibilities, and the interview recommendations with the greatest social welfare would be chosen.

Needless to say, the astronomic computing burden of such a brute force approach would rule it out of practical consideration. Some mathematical algorithms such as linear programming have had great success in handling other combinatory problems. Such approaches coupled with various stratified search procedures can achieve approximate solutions of the programming problem that may outperform simpler decentralized search procedures that make no attempt to cope with social welfare explicitly.

CONCLUSION

This kind of approach raises many difficult questions for research. If we had relationships for predicting productivity, satisfaction, and probabilities, we would have a powerful practical tool for the efficient allocation of interviews. This should supply motivation for the needed research. The computer side of this approach is certainly within the realm of possibilities even on a fairly large scale, but again a great deal more research is needed on the mathematical programming problem. At the present time we are trying to define the problems and are finding that we will need to learn a great deal that is not now known.

Several national studies have been made of the United States Employment Service recommending that electronic computers be introduced on a massive scale. Unfortunately there has been very little research on the question of how to use a computer in this application. Nevertheless, financial estimates have been made in the region of $100 million to implement this project. One might think it a bit rash to spend such an amount until more of the basic research is done.

We face a problem that does not look like the relatively simple airline reservation problem. It looks more like the problem of "Can you help me find a wife?" Some people are seeking instantaneous feedback from the computer. They want to walk into an employment service and say "Do you have a job for me?" and they want the answer immediately. If the answer comes back too fast, there is a serious danger that it has not been answered properly. The search may have been too narrow in scope or too superficial to make reasonably accurate predictions about the suitability of various jobs. The job question is an important one and any computerized assist should give it serious treatment. Fast information is not enough; we want to improve the quality of labor market decisions.

Appendix A

Dependence of the Median Productivity of Candidates Interviewed on the Amount of Screening, and the Accuracy of Productivity Predictions

Consider the situation in which a group of candidates is to be screened by an employment service for a particular job. Some candidates are to be referred to the employer for interviews. For simplicity we consider only the one-sided criterion under which the employment service tries to select those candidates who will be most productive in the job. The candidates' objectives are not considered here.

Assume that the productivities of the candidates will be influenced by a large number of independent factors and hence productivity P will be normally distributed across the candidates.

By analyzing information collected from each candidate who is screened and information from the employer, the employment service presumably is able to make an estimate of the productivity $\hat{P}$ that each candidate would have if he were employed in the job. These estimates are imperfect predictors of what actual productivity would be, and their accuracy can be stated in statistical terms. A linear regression of P on $\hat{P}$, actual productivity P on estimated productivity $\hat{P}$, reveals a rela-

$$P = a + b\hat{P} + e \qquad (1)$$

tion that includes a random error e which is independently and normally distribution with zero mean and constant variance where E is the expectation operator and a and b are estimated constants. The fraction of P explained by $\hat{P}$ is R^2.

The regression coefficient b is related to R by the relation:[7]

$$R = b\,\frac{\sigma_{\hat{P}}}{\sigma_P} \qquad (2)$$

where the σ are standard deviations.

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[7] Acheson J. Duncan, Quality Control and Industrial Statistics, Richard Irwin, 1952, p. 598.

Equation (1) can be espressed in terms of standard normal deviates.

$$(3)\qquad \left(\frac{P-EP}{\sigma_P}\right) = b\,\frac{\sigma_{\hat{P}}}{\sigma_P}\left(\frac{\hat{P}-E\hat{P}}{\sigma_{\hat{P}}}\right) + \frac{e}{\sigma_P}$$

If candidates are chosen at random to be screened for the job, then $\hat{P}$ is random, and by substituting (2) into (3) we obtain the following relation between the corresponding points on the two probability distributions of P and $\hat{P}$.

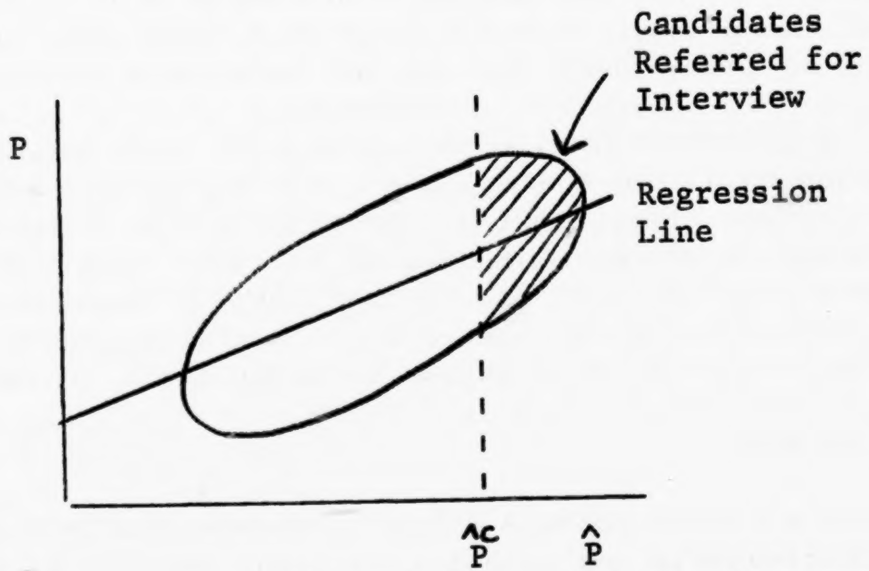
$$(4)\qquad k(F_P) = R\,K(F_{\hat{P}})$$

where

$$(5)\qquad k(F_P) = \frac{P-EP}{\sigma_P} \quad\text{and}\quad k(F_{\hat{P}}) = \frac{\hat{P}-E\hat{P}}{\sigma_{\hat{P}}}$$

are the standard normal deviates corresponding to cumulative probability from below of F_P and $F_{\hat{P}}$.

Now consider the following screening process. A person is selected at random from the group of candidates and his productivity estimated $\hat{P}$. If it exceeds a selected cutoff level $\hat{P}^c$, he is referred to the employer for a job interview, otherwise not. The selection of $\hat{P}^c$ determines through (5) the expected fraction of screened workers who will be interviewed $(1-F^c_{\hat{P}})$. This can be illustrated by examining the joint probability distribution of P and $\hat{P}$.



The median[8] percentile point of the candidates that are referred for interviews F^m_P is given by

$$(6)\qquad F^m_{\hat{P}} = F^c_{\hat{P}} + \frac{1-F^c_{\hat{P}}}{2} = \frac{F^c_{\hat{P}}+1}{2}$$

The corresponding median estimated productivity $\hat{P}^m$ can be found from (5).

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[8] It would be more elegant to determine the mean estimated productivity, but the median is more easily obtained.

Since the regression line gives the expected productivity EP for each value of estimated productivity $\hat{P}$, we may determine the expected productivity P^m of the interviewed candidates from their median estimated productivity $\hat{P}^m$.

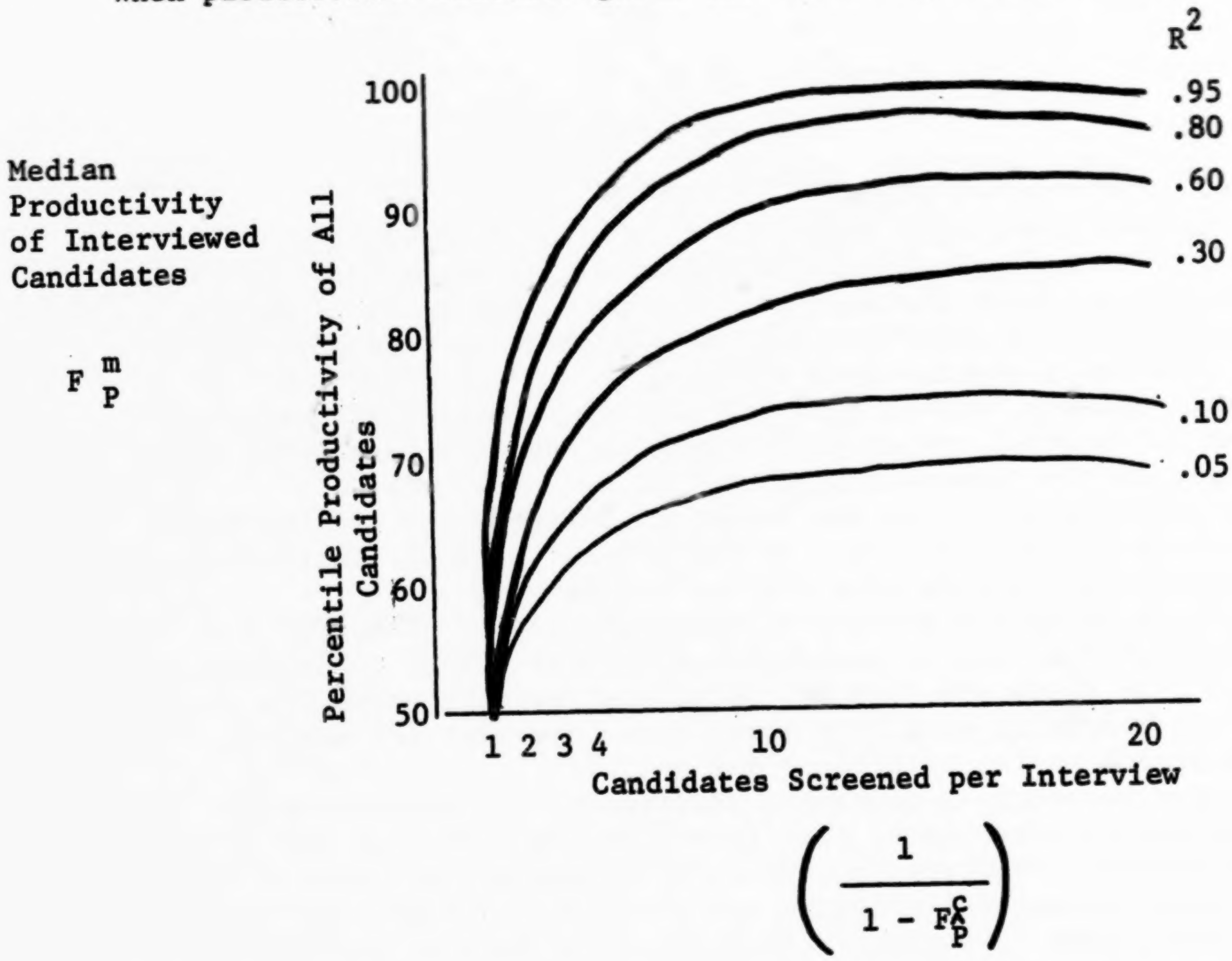
Equivalently we can use (4) to determine the percentile median productivity F_P^m that corresponds to the percentile median estimated productivity $F_{\hat{P}}^m$. Substituting (6) into (4) and solving for percentile median productivity of the interviewed candidates we obtain:

$$(7) \qquad F_P^m = k^{-1}\left[Rk\left(\frac{F_{\hat{P}}^c+1}{2}\right)\right]$$

where k^{-1} (   ) is the inverse normal distribution function.

Thus we have a relation that predicts the median productivity of the candidates referred for interview measured by the percentile point of the distribution of productivity from the correlation between productivity and estimates of productivity, and the fraction of candidates that are screened but not interviewed to the total number that were screened.

When plotted this function gives the following relationship:



Note that the correlation coefficient R of P on $\hat{P}$ is the same as for $\hat{P}$ on P, so the use of the former in (1) poses no restrictions on the analysis.

Chapter 19

The Current Population Survey and Manpower Research

J. E. Morton

The Current Population Survey as a tool for Manpower research is one of the outstanding data sources compared with any research area in the behavioral sciences and economics, in this country or elsewhere. Yet relatively little effective use has been made along analytical lines of this truly amazing data store.

Several reasons come to mind for this state of affairs; some of them point to remedial action concerning the manpower researcher himself, others to the information generating process.

This does not mean that the suspected deficiencies are the fault of the manpower researcher; yet, if he does not take the initiative, it is unlikely that anyone else will on his behalf.

First, there is the problem of research itself. This now ubiquitous term has come to mean quite different things to different people. As there are fashions in ladies' evening gowns, so there are in research; some have more, some have less sex appeal. Also this appeal varies with the times and with the occasion.

Although hopefully a permanent addition to our research wardrobe, manpower research is of only recent origin. Much of the ancestry of manpower research can be traced to demography, some of it to more recent behavioral sciences and their methodology, and last but not least, some to economics from the early days of political

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economy. Economics especially impressed on early manpower research a generally aggregative and macro viewpoint.

This has not greatly changed even after "factualism" became a widely acceptable approach; and in its quantitative form the highly aggregative technique became even more definitely established, probably also because the mainstream of available quantitative information was highly aggregative in nature, emanating from the concern of the "states" (see the original meaning of statistics in the sense of statistical data) about problems of political economy in terms of large national aggregates. Only much more recently have the resulting macroeconomic viewpoints been supplemented by microeconomic research interests.

This has been so also for earlier demography which had to rely for its information basis largely on the highly aggregative information provided by earlier population censuses.

The occasional exceptions to the predominant fashion or style of thought, the German historical school and in this country the earlier Wisconsin school, resorted often to what in fact were empirical case studies or broad generalizations, frequently philosophically and emotionally underpinned.

Modern manpower research could draw little encouragement from such circumstances and, more important, it was seriously handicapped in satisfying its information requirements.

If this conference demonstrates anything, it is to make it clear beyond any doubt that manpower research, if projected against the background of the classical taxonomy of research disciplines, is to a high degree an interdisciplinary subject. It also shows that manpower research cannot avoid the use of also micro data. Seen from the point of view of the information requirement, this points to a tall order, to say the least.

To come to grips with the information problem, the preceding papers and reports have shown that, in most instances, the manpower researcher had to secure his own information base, in one way or another. Although it is of course quite possible for him to be his own information generator, this is likely to lead to what in fact are case studies, which do not lend themselves to generalization. Also, and probably more significantly, it encourages more nearly descriptive rather than truly analytical efforts. Most of us found ourselves at one time or another so tired out, personally or in terms of other resources, after the conclusion of the fact finding phase that we had to stop before we ever reached the really analytical part. Although this may satisfy some historians and historiographers of the past or present, it misses the real objective of manpower research.

You might object that even if this be so, it is ultimately a question of research cost. Perhaps so, but human and other resources as they are given today would suggest that manpower research in no way commands the sex appeal or resources characterizing, say, space research; yet its subject matter is quite complex, answers are difficult to obtain, and depending on the particular cost-benefit calculus they might be quite as significant for economic development and for the very stability of society.

This brings into focus the main topic of this paper: The Current Population Survey.

The CPS is a most appropriate topic to be discussed here at Ames, one of the birthplaces of the application of modern probability sample design. Some of the most famous names connected with these efforts were or are still on the faculty of Iowa State University.

The CPS is an outstanding example of the results of some of these efforts. It is a unique undertaking--unique in this country or elsewhere. It has been a predecessor of similar surveys in other parts of the world and a potent stimulus to attempts towards securing analytically promising information useful to manpower research.

The CPS is a child of the depressions of the thirties. The manpower problem, or one of its aspects, unemployment, was in the forefront of national policy. No acceptable unemployment figures were available, and WPA was entrusted with the conduct of the sample survey of unemployment. Mainly macro-oriented (i.e., towards national estimates of unemployment), this activity was moved from WPA to the Census Bureau where it soon developed into what in fact became a regular intercensal population survey producing information relevant to manpower research far exceeding the scope of the original unemployment survey.

The direct costs of this survey are of course high compared with ad hoc university-sponsored field studies, but its indirect costs are immeasurably higher and quite outside the scope of a private organization. They include years of work on sampling designs, as referred to earlier in connection with this university; they include careful data appraisal, post-enumerative checks, comparison with census results, lengthy interviewer training, and many other efforts that have no parallel elsewhere in the field of social statistics. Even much of theoretical sampling theory was developed, by Census staff, within the context of this outstanding experience with population sampling. Nevertheless, the analytical exploitation was largely limited to more conventional though administratively highly relevant description.

In spite of its large size, which alone makes it financially inaccessible to being considered for private survey efforts, CPS is of course limited to sample data. I am not thinking about the presence of sampling errors--which are evaluated carefully for CPS estimates--but rather of the intrinsic limitations of any sample survey. For example, if we wished to analyze a manpower problem as it exists in a particular geographically disaggregated area, say, Tompkins County, N.Y., and Tompkins County did not happen to be one of the sample areas included in the CPS design, no information on that particular unit is produced by the survey. This may be the administrator's (say, in Tompkins County) worry but not at all the manpower researcher's who is interested in an analytical problem concerning manpower resources in the United States.

The reason for wishing to use disaggregated information is not the existence of this or that specific county but the establishment perhaps of relationships by size and characteristics of counties. Within the limitation of the overall sample size, which for CPS is quite respectable, such analysis is quite possible, although Tompkins County may not be a sampling area. Stated differently, CPS's weakness is that it is not a convenient vehicle for restricted case studies which presumably are of interest to the manpower analyst only where he is unable to secure more widely generalizable information.

However, CPS information is certainly a most worthwhile data source for generalizable analysis of data which can be disaggregated along nearly any dimension of variables, provided they are at all included in the CPS schedule.

Another characteristic of CPS is that over the years it has become a major vehicle for inquiry other than that originally designed. Many other surveys have been either added from time to time to the regular CPS schedule or separately administered to the CPS sample household (e.g., consumers' purchasing intentions).

Last but not least, since the sample rotates only slowly, there is the opportunity of matching responses of identical households for the period they remain in the sample, thus obtaining rudimentary cohort type data.[1]

Why then is the actual analytical use of CPS so limited? This brings us to the second point.

So far, I have been trying to make your mouth water by dangling CPS information in front of your eyes. Now, when it comes to ordering and actually testing the delicious dishes, I must admit that the situation is not nearly so satisfactory. We are confronted with an excellent restaurant, a superb kitchen, and an excellent cook, but there are no dining rooms or waiters; instead the cooks package the dishes in the form of menus of their own choice which they sell--cheaply enough--over the counter. The specific forms of these food packages are the well-known printed statistical tables published by government agencies such as the Census Bureau and the Bureau of Labor Statistics.

Again we are up against what looks like a cost question but in fact is much more. Two points need to be made:

1. It is not feasible to extend the statistical publication program to include all multivariate tables that conceivably might be of interest to some manpower or other researcher, present and future.
2. Where microinformation is needed, conventional publication techniques are unable to cope with the problem, short of course of publishing original filled-in schedules in extenso.

Concerning the first point, it is of course conceivable that at some time only tables of "general interest" (as a rule in the form of two variable arrangements) will be published; only a very few of these might suffice to meet the broad needs of the general reader. The more important remainder of relationships, mostly multivariable ones, could be summarized in the form of, say, variance-covariance matrices. But even such a "solution" would not be an answer to the second problem.

Where microanalysis is to be performed on microinformation or on substantially disaggregated data, as in manpower research, something much more drastic is called for. Here the essential building block as far as CPS is concerned is a single schedule or set of schedules pertaining to one and the same household. These building blocks then have to be related to each other in whatever way may be required by the particular analysis. It is at this point that the recent advances in computer technology have created an altogether new situation.

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[1] J. E. Morton, "Analytical Potential of the Current Population Survey for Manpower and Employment Research," W. E. Upjohn Institute for Employment Research, Kalamazoo, Mich., 1965.

Seen from the analytical user's point of view (who himself is not on the staff of the government agency which possesses the information and which wishes that the particular analysis be performed by a staff member) there are two ways of approaching his information problem: (1) He may try to secure the original microinformation and process it as required by his analysis, or (2) he may have the microdata (without ever seeing them) processed according to his instructions by the government agency or by some other yet to be created organizations (these latter, perhaps, in the form of a public utility). Both solutions must overcome awesome obstacles about which it is incumbent upon the manpower researcher to form a clear opinion and to take the initiative. In view of the long lead time he should do so at once, if for no other reason than not to have settled upon him some unsatisfactory arrangement which, once agreed upon, might take the form of an accepted solution, difficult if at all possible to change.

Several attempts of this nature are under way, the latest in this general area being the report of the so-called Kaysen Committee. A first necessary but insufficient step is the creation of an information storage and retrieval system incorporating the desired microdata.

It is not without significance that an early try within the government toward such a system has been undertaken in the field of manpower analysis by the Bureau of Labor Statistics--under the direction of R. C. Mendelssohn--albeit so far mainly for data already aggregated but on relatively low levels. To translate and adapt this system to true microinformation is an additional gigantic step forward, yet to be undertaken.

However, there is a series of further steps required to bring a manpower data system to fruition; they all may well be first steps in the timetable of the manpower researcher:

1. In view of such or similar developments, the manpower researcher should start thinking about analytical formulations which would take advantage of the availability of computerized manipulation of microdata. (Professor Holt's paper again is a good example.) This, of course, does not mean that the manpower researcher should become a programmer himself, although some knowledge of computer principles, including perhaps one or the other programming language (the latter to the extent of three to four weeks' study), would seem to be essential.
2. The manpower researcher should become more keenly aware of the fact that he, as do most other scientists, lives by his empirical information; he therefore should begin specifying to himself his particular information need as articulately as possible.
3. Finally, he should be fully aware that information in this age is an extremely powerful (hence "touchy" commodity, and he should be prepared to speak out in the growing conflict between

those voicing the right to information and those defending, often with catchy and demagogical argument, the right to secrecy.

Chapter 20

Allied Health Manpower and the Public Health Service

John Goltman

As for medical, dental, and nursing needs there simply is no quick way we can provide necessary increases. Of necessity we must look to the Division of Educational Services and the Division of Allied Health Manpower to provide needed support.

This term "allied health manpower" is defined as including all those professional, technical, and supportive occupations in the fields of medical care, community health, public health, and environmental health services whose activities support, complement, or supplement the professional functions of the medical doctor, osteopathic physician, dentist, and professional nurse.

Organization-wise the Division of Allied Health Manpower (1) conducts and supports grants and operational programs to increase the supply and improve the education, utilization, and effectiveness of manpower in allied community, clinical, research, and environmental health occupations; (2) projects national needs and analyzes trends, assessing the impact of technological, environmental, health program, and other factors; (3) assesses need for, availability, and quality of educational programs, training centers, and other facilities and of teaching personnel; (4) studies costs, financing, and means of improving the quality of these programs and develops concepts and implementation programs; (5) provides consultation and assistance on curriculum development, teaching methods, and other elements of educational programs; (6) develops concepts and

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programs to improve the utilization and effectiveness of allied health occupation personnel; (7) stimulates interest in health careers; and (8) develops and supports appropriate programs of continuing education.

The Division expects to encourage and support various kinds of projects, particularly in the following areas:

1. Curriculum development: Special curricula for the training of economically disadvantaged, ex-military corpsmen, the identification of functions, duties, responsibliities, and skills for new and emerging health specialties and the preparation of instructional materials for their training; identifying "core" courses for health occupations and developing model course content. The identification, description, collation, and assignment of functions, duties, responsibilities, and skills to new entry-level jobs.

2. Teacher training: Construction and demonstration of pilot programs to train practicing health specialist practitioners as teachers in their field; the identification and validation of measures of potential teacher success among practitioners with an interest in teaching in allied health fields. This program has the highest priority.

3. Educational methodology and technology: Experimentation with and demonstration of the use of educational closed-circuit television, electronic computers, motion pictures, and programmed instruction for teaching in the allied health fields; the preparation and classroom use of special course content in programmed instructional form; testing and evaluating the relative merits of various teaching procedures in allied health subjects.

4. Recruitment and counseling: Evaluations of printed recruitment information and data via content analysis, level of readability, level of message impact, and other measures; the relationship of personality types to specific allied health fields; correlation of work exposure to occupational selection in the allied health fields; construction of aptitude scales for the health fields; developing the potential of various media of communication for recruitment campaigns utilizing such techniques as geographic area saturation and sequential concentration on special population groups; comparing the effectiveness of directed versus nondirected counseling and interviewing techniques in the health specialty areas; the role of teachers of health subjects in providing occupational information and guidance,

5. Management, organization, and administration: Demonstration of more effective ways of professional use of supportive health specialists; studies of worker utilization in different types of delivery of health services such as group medical practice, solo private practice, out-patient services; studies of the influence on health worker utilization of various types of architectural models; studies of worker utilization in different management systems with different types of business and medical equipment.

6. Continuing education and retraining: Identification and description of topics, subjects, course content, and supervised on-the-job experience needed in the continuing education of allied health personnel; development of and experimentation with retraining procedures for different categories of workers (those new to health fields and those switching health fields); evaluation and testing of the efficiency of various courses.

To summarize, using all available means, it is the job of this division to provide to the degree possible the only immediate solution to our problem--a supply of trained, qualified sub-professionals in order to extend the capabilities of the professionals.

Public Law 89-749, "Comprehensive Health Planning," is a new and, hopefully, a helpful piece of legislation. Congress has stated the purpose and aim of this program thus:

> To amend the Public Health Service Act, to promote and assist in the extension and improvement of Comprehensive Health planning and public health services, and to provide for a more effective use of available Federal funds for such planning and services.
>
> Further, the Congress declares that fulfillment of our national purpose depends on promoting and assuring the highest level of health attainable for every person, in an environment which contributes positively to healthful individual and family living; that attainment of this goal depends on an effective partnership, involving close inter-governmental collaboration, official and voluntary efforts, and participation of individuals and organizations; that Federal financial assistance must be directed to the marshalling of all health resources National, State, and local to assure Comprehensive Health Services of high quality for every person but without interfering with existing patterns of private, professional practice of medicine, dentistry and related healing arts.

I know you are all familiar with the amazing number and kinds of health programs presently supported by federal funds and realize that a great deal of planning must be going on in connection with each of these programs. Some of the planning is statewide. Some of it is based on a locality or a metropolitan area. This multiplicity of planning efforts at the state level operates under the same multiplicity of agencies and authorities--some governmental, some nongovernmental, some a mixture of both. All of these activities utilize personnel many times in duplication.

Nowhere, however, is there an entity that relates these plans to each other and decides on relative priorities. There are no data on which to base decisions between alternatives. No one is equipped to say, for example, that unless money is poured into nursing schools in a state next year, they cannot extend the benefits of Medicare or Medicaid to more people. No one has either the knowledge or the authority to give top priority to building nursing homes in a particular area of the state instead of spending those dollars to utilize the personnel for something else.

The first part of the Comprehensive Health Planning and Health Services

Act is an attempt to provide a focus for this kind of decision. To qualify for planning aid, a governor must designate or create a single state agency with the responsibility for administering or supervising the state's health planning functions in the development of a comprehensive plan. This can be a new agency, an existing agency, or an interdepartmental entity. Its basic job is to examine the needs of the state and recommended priorities for meeting those needs with the resources available. The basic resource, of course, is people.

The Act does not endow this agency with direct authority. But if it does its job well, it will certainly be influential in the fundamental decision on where the state health dollar should go, and on where a great many federal dollars will go as well. The law requires that the state agency be advised by a state health planning council representing state and local agencies and groups concerned with health but with a majority of its members representing consumers of health services.

It also has other provisions supportive of health planning. One of these is a project grant program for areawide health planning similar to the existing program except that the new law requires a relationship between these project grants, made on a regional or local basis, and the Comprehensive Planning program. A third aspect of support for planning is provided through funds for training people in planning skills--a field of critical manpower shortage.

The second major aspect of the law deals with service-providing functions--the Public Health Service and State Health Department programs for health services. As you probably know, these have been compartmentalized stringently in the past into categories.

It is self-evident that needs vary from one part of the country to another, from one state to another, and within a single state. Therefore, the second principal thrust of the new law is to provide flexibility in the use of funds. The state will plan its use of health services money in the areas in which important success can be attained. Obviously the granting of these funds will be dependent upon a state plan which shows what the state intends to do. This plan, in turn, must be related to the comprehensive plan. The important thing is that there is now a range of choice within the structure of grants for health services.

The third important aspect of the law relates to the project grant authorities which have proliferated over a period of years. These were grants from Public Health Service to public or nonprofit private organizations in the cities and counties. Most of them were for specific disease control purposes or for developing new ways of delivering a variety of services. Each of these authorities was quite strictly limited--even the community health services and facilities project grants, for example, were limited to out-of-hospital services and weighted toward the chronically ill and aged.

What has been done now is to pool these project grant funds and to broaden the possibilities of using these grants either for innovation, demonstration, or a specific target.

The intent of the act is clear--to give to the states, cities and counties more initiative, more flexibility, and (just as important) the attendant responsibility. It is designed to permit federal funds to meet the special requirements of different areas.

In the past, the bureaus, divisions, and programs of the Service have carried full operating responsibility. The Office of the Surgeon

General has primarily performed a coordinative and policy-setting function, and the nine regional offices have served principally as "bases" for the program operators whose first line of responsibility has been to the bureau and division chiefs in Washington. But this new program does not fit this mold. Every bureau is deeply involved, particularly the Bureaus of Health Services and Manpower. Therefore, a decision was reached to put the budget for this program in an organizational entity responsible directly to the Surgeon General and related closely to all the bureaus. It will be administered as a Public Health Service enterprise, and its operations will stem from the regional offices. In other words, "The regional offices will be where the action is"

Specifically, the management of the new grants programs will be located there. They will receive applications, arrange for and supervise their review both technically and in terms of conformance with comprehensive plans, award the grants, and carry out necessary follow-up procedures. One obvious advantage appears immediately--instead of some 15 places to which applications were directed for these grant programs there will now be a central focus and a single point of application. There will be within each region an Associate Regional Health Director for Manpower who serves as a principal staff assistant to the Regional Health Director and as such has primary responsibility for directing and coordinating the manpower regional program activities, relating these activities to the health needs of the region, and actively participating in the development, review, and evaluation of comprehensive state and local health plans. He also directs or coordinates regional relationships with educational and training institutions, including consultation and technical assistance, information or availability of PHS grant and loan programs, stimulation of interest in health careers, studies of manpower needs, and studies of more effective utilization of health manpower.

It is also planned to create in each region an outside advisory council which could be a strong source of guidance to the Regional Health Director in managing the program. These councils would include competencies from industry and the universities, from medical practitioners, from experts in public affairs, and the like. This council system, in addition to serving a vital purpose in support of the Regional Health Director, would have the further advantage of bringing additional talented and competent people into the review of federal-state-local programs.

As indicated, this involves almost a 180-degree turn in the operation of our regional offices. Heretofore, each has had a very small "house" staff plus a large number of program representatives from the various bureaus, all owing their basic allegiance to their home program and frequently engaged in a kind of competitive scramble for grants business. This is a perfectly natural outgrowth of a system which measured accomplishment.

We believe the changed procedure will bring about a changed climate. The program will now be charged with defining objectives, assisting states in setting goals, measuring program effectiveness. There will be an important strengthening of the federal-state partnership through the geographic decentralization of substantial authority. Certainly if successful, and with an Associate Regional Director for Manpower, we should have more efficient utilization of available personnel and more effective production of needed disciplines in all categories.

Chapter 21

Some Manpower Research Needs

Arnie Solem

The manpower program in the United States is beset with a host of almost insoluble problems striking at the most vital areas of effective administration. These include basic problems of organization, planning, staffing, and a harrassing array of interagency frictions. Yet we are attempting to achieve results that go far beyond anything previously done in the world, such as conditioning inhabitants of slums and Indian reservations for work in a technological society. We are painfully aware that people all over the country need competent vocational guidance. Industry is faced with shortages of the skilled and professional personnel needed in growing numbers to man our new science-based economy. We have, in short, a magnificent manpower program in terms of the ends we seek, but the means are improvised and uncertain of success.

When working with the problems of people, it is difficult to disengage the means from the ends. The quality of the work we do becomes highly important. We can train an Indian youth for a job in the city, but if the conflict between his old and his new scale of values makes him into an alcoholic, we cannot call that success. We must somehow find means of helping him reconcile this conflict. In other words, we should not approach these human problems in terms of superficial criteria of success. We need to build on a solid foundation of the best knowledge

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that can be made available to us. We are living, for example, in an age of giants in physics. We must carry on at least some research in the behavioral sciences to provide the quality of manpower that this implies.

What in general are the major areas of needed manpower research? We need to know more about the characteristics of the people we serve. As Dr. Eli Ginzberg said recently, "It is time we disaggregated the disadvantaged." We must also develop new tools and methods, such as "change agents" or "behavior modifiers," that will bring people to the point of employability and, hopefully, to real job satisfaction. We need to test the effectiveness of the tools already in use, such as counseling and work experience. We then need to examine the skill and effectiveness with which our personnel use these tools in working with the people they serve.

Management is said to be the most useful of all the technologies, because good management can make programs fruitful and ineffective management can lead to frustration for both employees and their clients. We have serious management problems that can be solved in some degree by the application of good administrative research. We are also associated with many other agencies, and the whole business of harmonizing our efforts calls for special skills and leadership qualities.

There are areas of needed research involving employers and the development of their employees. These areas of research require many kinds of expertise such as job analysis, manpower utilization, job development, and determining future occupational requirements. Manpower information and how we can best disseminate it is a vast field in itself. Employers need to upgrade their employees, not only to meet their needs for skilled personnel but also to provide entry jobs for the disadvantaged.

We had a research program along some of these lines both before and after passage of the Wagner-Peyser Act in 1933. Marion Trabue of the Employment Stabilization Research Institute at the University of Minnesota made a plea for a strong program of employment counseling about two years before the Wagner-Peyser Act. He believed that psychology had advanced to the point of providing the needed underpinning to employment counseling. Under the direction of Dr. William H. Stead, research was carried on in Providence, Rhode Island; Baltimore, Maryland; St. Louis, Missouri; and Dallas, Texas. In a recent letter, Carroll L. Shartle, who was Chief of "Worker Analysis" under Dr. Stead, said that these centers were really 30 years ahead of their time, and if World War II had not knocked them out, our manpower operations at the local level would be far ahead of what they are today. One of our greatest needs, he said, is to revive them. The General Aptitude Test Battery and the Dictionary of Occupational Titles are good samples of what they produced. These activities were not continued after World War II. By that time hardly any of the staff engaged in psychological research were left in the employment service. In the meantime a very capable staff in economic and job market research had been added. This led to more and more quantitative research.

There are many other historical factors to consider of which I will mention only a few. The state unemployment insurance organizations got well under way before the employment service was brought under their control. The administrative staffs in unemployment insurance were mainly in need of economic research involving such problems as the size of the fund, the extent of unemployment, and the level of contributions and benefits. Research and analysis units were established in each state agency staffed mainly by economists or people with some training in economics and statistics.

The budget system had certain built-in incentives that gave priority to the more simple operations instead of those requiring research answers. While it made good sense to budget for unemployment insurance activities on the basis of detailed work units, such as number of claims filed, this approach had a vastly different effect on employment service operations. Local office personnel cannot choose the kinds of unemployment insurance work loads to process. This was not the case in the employment service. Promoting jobs to mow lawns might bring in more "budget justification" than placing skilled workers. While it would be unfair to imply that a lot of high-grade work was not done by capable people in most employment offices, it was inevitable that local office personnel would be influenced by factors so important to their continued employment.

As long as the main task of the employment service was simply matching men and jobs, there was little dissatisfaction with its performance. Counselor training came in for a lot of discussion, but little progress was made. Many were of the opinion that employment counseling was, after all, only high-grade interviewing and did not call for research.

The manpower legislation of the past three years unloaded on the employment service a whole new array of programs and problems. Most of the new clientele were people with psychological problems. These were precisely the kinds of problems that the administrative agencies, with their strong economic orientation, were not in a position to meet. Much of the research was allotted to the universities which were not inclined to come to grips with the practical problems of making people of the slums suitable to employers.

The biggest gap in our manpower program is lack of down-to-earth research, designed to help the people on the firing line work with greater assurance and precision. We also lack a general climate of administration that will encourage the development and use of such research. We need strong support for training the people who will apply the research findings. Our research should be decentralized and problem-oriented.

To create the kind of awareness throughout the whole federal-state organization of the need for a professional approach to the problems we face, I can think of no better model than the great institution at which we are holding this seminar. The Morrill Act signed by Abraham Lincoln 105 years ago set the stage for research, teaching, and extension in agriculture. We need all three of these functions and in good measure to guide our manpower policies and operations. We should bring well-tested professional services to the people we serve.

As a first major step in that direction I recommend the establishment of a regional manpower research center in each of the employment security regions. The Federal-State Employment Service and several bureaus of the Department of Health, Education and Welfare should be partners in this enterprise. The research centers should be loosely attached to a large local office or manpower center. Much of the research would then be based on actual operations, and manpower research data could be derived in part from the various local office transactions. Tentative findings could be tested in practical operating situations.

A manpower research center should be headed by a highly competent research psychologist of the caliber of our regional counseling consultants. There would be linkages with universities, and he should be capable of holding his own with university research personnel and counseling trainers. If he were able to help university personnel keep their research on a sound basis, he would soon earn his salary. Our experience with university manpower research, I am sorry to report, has not been very satisfactory.

Evaluation of applicants is a key function since it provides a basis for planning services for the applicant. One important mission would be development of methods for making high-grade evaluations. This could be developed in cooperation with personnel of Health, Education and Welfare and serve the needs of all manpower-oriented agencies in the area. Competent evaluations could also provide a more adequate appraisal of persons to be referred to employers. By setting up an advisory committee on which employers and particularly personnel men served, there would be more confidence in our job development efforts. Continuing research would stem from a continuing appraisal of the effectiveness of our evaluations. Weaknesses would be identified and steps taken to improve the system.

Various "change agents" or behavior modifiers to make clients more employable, such as counseling and work experience, would be tested and new ones developed. Basically, a cycle could be established whereby the actions taken to refer persons to training, to jobs, or to work experience would be followed up to evaluate the results. Successes would be noted and failures analyzed with the object of finding remedial devices. In this way our various behavior modifiers could be improved and used with more precision, which is just another way of saying that a larger percentage would be helped by our operations and a smaller percentage hurt. We would also find better ways of determining when we should refer applicants directly to jobs and when we should send them to the Job Corps, MDTA, work experience, or whatever may be available.

Research would also be generated by the uncovering of manpower problems of both private employers and public agencies. Personnel at all levels should be sensitized to the nature and purpose of research so they can cooperate more effectively in discovering significant research problems.

Badly as we need manpower research, we are equally in need of applying the concept of "extension." We are simply not communicating in a meaningful way with the people whose services can make or break our programs. First of all, most of the manpower research to date has not dealt with the problems faced by the "operators" who are concerned primarily with the proper use of the tools available to them in face-to-face contact with the people they serve. This is one of the most critical areas of manpower operations today.

Again I find in the brilliant work of Dr. Joe M. Bohlen and Dr. George M. Beal on the "diffusion process" here at Ames the kind of scientific approach that we should adopt. Unfortunately, when I proposed to use this technique several years ago, Doctors Bohlen and Beal said that the "diffusion process" had not been scientifically tested for such purposes, and the people in the Department of Labor said it was just a common-sense approach that did not require testing. I believe we could communicate much more effectively if we had a research center where methods that appeared to be bringing good results could also be tried out by the "innovators" and "early adopters."

In this process we would be communicating much more than new methods; we would be laying the foundation for a truly professional approach to our work. For years members of the "International Association of Personnel in Employment Security," which is the organization of the rank and file in the

Employment Service, have talked of professionalization. This would provide them with a bona fide body of professional knowledge.

In a recent letter from a well-known professor of counselor training, the point was made that we need genuine professionalization in the employment service. We need to make the work attractive to professionally trained people. Until this is done, he said, research will be of little value.

The educational and training aspects of manpower research centers need little elaboration. These could range from training outreach personnel to practicum for counselor trainees at a university, or students of labor economics learning about the wealth of significant data in our programs.

In preparing this paper, I solicited the suggestions of several authorities on counseling research. Most of those who replied were also familiar with our operations. Their questions for research related mostly to how skillfully our personnel are capable of using the tools at their disposal.

A thought-provoking--and I hope a research-provoking--reply was received from Ralph Berdie, Professor of Psychology and Director of Student Life Studies at the University of Minnesota and a leading authority on counseling. He believes that attention should be focused particularly on the effect of the instruments we use on our clients. He asks, for example, if it is not about time that we look at the persons who have received and those who have not received various kinds of occupational information, taken different kinds of tests, and the like. We should find out how the use of these instruments has influenced job getting, job holding, promotion, productiveness and job satisfaction.

Dr. Berdie also urged basic research to learn more about the life styles associated with various occupations. In choosing an occupation, the counselee also chooses a life style involving associates, family, recreation, and many other things. He points out that current occupational information pays little attention to such important factors in the lives of people.

The suggestion that the U.S. Employment Service might get the most for its research money by synthesizing and disseminating research studies reported in professional journals and monographs was made by Dr. John E. Muthard, Professor of Education and Coordinator of Rehabilitation Counselor Education at the University of Iowa. Both the Vocational Rehabilitation Administration and the Office of Education sponsor a good many studies that are relevant to employment service counseling.

Another field which he suggests needs development is manpower utilization. It would certainly be helpful to have practical research in this field, since we need to find out what are the real job requirements as compared with the ideal hiring specifications set up when the job market provided greater choice. Upgrading of people in the present entry category to make room for the disadvantaged entrant would be desirable. Many women would enter the labor market if hours of work could be made to fit their needs. There are endless possibilities in this field of manpower utilization which we have not tapped. It calls for persons with new skills and greater use of some with present skills, such as job analysts.

Several respondents, including Dr. Muthard, were concerned with the problem of developing meaningful criteria against which to measure the effectiveness of counseling. He said that this problem turns out eventually to require an examination of the basic objectives of the organization providing services. This is obviously the first step in any sound program of evaluation.

One of the suggestions of Dr. Max F. Baer, National Director and Secretary of the B'nai B'rith Youth Organization, was aimed at measuring the results achieved when counseling is offered by persons with various levels of training, such as with a one-year Master's degree as compared with a two-year Master's degree. He is primarily interested in the relative effectiveness of counseling services to different disadvantaged youth as offered by different kinds of personnel. He would like to know if the disadvantaged can be reached through psychologists and social workers who receive some vocational orientation more effectively than through vocational counselors. The substitution of definitive research for "horse-back" opinions in this area would indeed be a great service.

Dr. Raymond C. Ehrle, President of the National Employment Counselors Association and Director of Rehabilitation Counselor Education at the University of Maryland, had an interesting research suggestion. With one group of disadvantaged clients he suggested that behavior modification be based on "work" and with a similar group the basis would be "words." The second group would be involved in either individualized or group counseling and the first group would be given work. The assumption behind this is that persons reared in a slum culture learn better through structured work experience, including work evaluation and job try-outs. In his opinion, considerable research needs to be done in this area. Structured work experience, he believes not only might be more effective for learning job skills but in some instances would help integrate the personality of the clients.

Dr. Ehrle mentioned seven different behavior modifiers including teacher-learning, individual counseling, group counseling, work experience, and identification of the client with a successful person. It is highly important that we extend the number and increase the effectiveness of these behavior modifiers through systematic study. We might take as our model those who work with the physical sciences. At Cape Kennedy, for example, physical scientists are being told what inventions are needed. They must develop heat-resistant metals so we can get to the moon. Application is forcing discovery. In the behavioral sciences, on the other hand, application typically lags for many years.

Dr. John W. M. Rothney, Director of the Research & Guidance Laboratory for Superior Students at the University of Wisconsin, wondered why during the past years there has been no real longitudinal study of the development of vocational interests as young people go through their education and careers. The employment service, with its close relationship to industry and working in cooperation with educational institutions, should be in an excellent position to do this.

Dr. Kenneth B. Hoyt, Professor of Education and Head, Division of Counselor Education at the University of Iowa, had several excellent suggestions. To the best of my knowledge, he was the first to organize institutes for training counselors in the employment service. First of all, he believes that we in the employment service should take a new and hard look at the production and use of occupational information in counseling. He finds that too much information is concentrated on the professions, while information at the skilled work level and below is scarce. He also finds a particular scarcity of information for short-range planning, which may be equally as important as the long-range perspectives. He suggests that the employment service is in an ideal position to do research on the relationships between sub-professionals and professionals in counseling. He further suggests that the employment service concentrate on research which has a short-term rather than long-term payoff.

Several persons suggested that there be more study of the value systems of minority groups. This idea would be particularly useful in our work with Indians.

There has been a great deal of experimentation with outreach services in an urban setting but hardly any in the rural areas. Rural poverty is more likely to be hidden, with only a few in any one area. In the aggregate, however, the problem of rural poverty is large. Dr. George Tolley of the Department of Agriculture estimates that there are 17 million rural poor. There is need, then, for a project which would arrive at the most fruitful combination of methods for finding rural youth in need of services and helping them prepare for a suitable job. This might involve the use of movies, extension offices, schools, comic books, churches, or any other method that brought results. Since the rural poor receive relatively little help, this could be a very useful project.

The reluctance of some rural youth to leave a place where there are no jobs illustrates the difficulty of trying to bring about greater mobility. It would be helpful to have competent research into the many complex factors that influence mobility. At what age do children experience the least adverse effect from moving to a new city or neighborhood? Are there relationships between financial means and mobility? What does an Ozark farmer give up when he takes a job on a farm in Iowa? What does the family gain? How important is the security of having relatives around and the leisure to hunt and fish with them, grow a garden, and find companionship among people of his own social class? Mobility is an important manpower device, and we need more significant research into the deeper human aspects of it.

Work experience may not be as essential for rural youth who are work-oriented as for urban youth. The whole area of work experience should be studied to determine for whom and under what circumstances it may have beneficial results and when it may delay the pursuit of more meaningful preparation for a job. Effective supervision of work experience clients should also be studied and a massive supervisory training program put into effect. Based on adequate research this might increase substantially the benefits of work experience. It might be extended to private employers who have youth working for them. Such a program should pay its own way in terms of greatly increased productivity as well as provide youth with a more meaningful work experience.

A related project might develop the most profitable relationships between work experience supervisors and counselors or other persons engaged in evaluation. For example, the kinds of tasks for which the applicant shows aptitude should be reported.

Employer cooperation is the Achilles heel of the manpower program. We need to know more about the problems employers face when they take on disadvantaged people. If employers are to work with the employment service and make use of persons who are not yet skilled and who may not be very dependable, it would be helpful to all concerned if studies could be made to determine the most satisfactory ways of helping the disadvantaged to adjust to employment situations. Ways by which the employers could become better prepared to orient the disadvantaged could be discussed with personnel men, foremen, and others involved. We should do everything possible to facilitate the entry of the disadvantaged into employment.

The National Manpower Conference for Indians, held in Kansas City in February 1967, has made employment service personnel more fully aware of the Indians' abject poverty and their problems of finding employment. Several fruitful lines of research were indicated. One of the most interesting was the Seattle MDTA project, operated by the Bureau of Indian Affairs with the close cooperation of several other agencies such as the health services, employment service, and the educators. While the men were learning various skilled trades, their wives were learning all about living in the city. About 200 Indians have already been placed on jobs, with a starting salary for most of them of $3.22 per hour.

This combination of training for the entire family and relocation in groups appears to have the main ingredients for success. Also there should be good "settling in" services at the new location. By identifying tight labor markets not too far from the reservation and training whole groups for the new work, much should be accomplished. Here is a formula for research and development projects that might well be tried out in several places.

Another very promising development that permits the Indian to retain most of his system of values and still function in our society is coming out of experiments in Arizona and South Dakota. Children are being educated in both their Indian culture and the white culture at the same time. This reduces the tendency for conflict as to what they should do in a given situation. There is less frustration, which frequently leads to alcoholism. This educational experiment should be tried out in many other places.

In a letter from Thomas Tommaney, Superintendent of the Haskell Institute, he points out that the contrast between the fast-paced and noisy urban environment in which Indians may go to work and the quiet of their familiar surroundings on the reservation is so sharp that it is difficult for them to adjust. He suggests that a research project concentrated on this element of the total picture would be an important contribution if it developed principles that could be translated into meaningful action and guidance for Indian people.

Many suggestions for manpower research have been developed by staffs of the Department of Labor and special committees, such as the Work Committee on Counseling Research and the Labor Market Research Committee chaired by Professor Arnold Weber of the University of Chicago.

We also need administrative research. Garth Mangum of the National Manpower Policy Task Force characterized our whole manpower structure in a phrase when he said that any relation to a "manpower system is largely accidental". While the present system, with really no one in charge, cannot continue indefinitely, there are things that can be done to make it work more effectively. One important forward step would be the reduction in areas of conflict among the manpower agencies. Although the current pressures to reorganize government on the basis of objectives will help to eliminate the conflict that arises from overlapping responsibility, this is not enough. We need to build strong community organizations at the grass roots.

The employment service could accomplish a great deal by taking positive steps to build strong local cooperative units composed of all community agencies that can contribute to a manpower program. This group would plan and have continuing surveillance over manpower operations. Where important manpower services were lacking, an attempt would be made to secure them. In areas where communities were too small to justify a full array of services, the "functional economic area" concept, on which Karl Fox of Iowa State University has done such excellent work, might be introduced. Such an area could embrace four or five local office areas and, hopefully, the central city would be large enough to support health, welfare, training, and other necessary manpower services. Our research on this idea at Ottumwa, Iowa, may demonstrate that such an area may be large enough also to justify a "community organizer," who would be concerned, among other things, with bringing all suitable community agencies together to provide manpower services. He would negotiate with state and federal officials for those services that were missing. If we can nurture these programs and services in the local communities, we can overcome many of the weaknesses that probably gave rise to Garth Mangum's observation.

But local office managers and their staffs need assistance in building these cooperative units, and they need to be taught skills in chairing meetings and mediating conflict. Even if community organizations are built with the major objective of removing areas of conflict, there will usually be plenty of it. Some of these areas of conflict stem from overlapping responsibilities, and since duplication is costly, there are good grounds for pursuing such a program on the basis of savings alone.

The research would be pointed at ways for securing wide involvement, including involvement of the poor, effective cooperation, and group decision making of a high order. A local office manager needs a substantial amount of group leadership training in any event, whether he works with a group of community leaders, personnel of participating agencies, or his own immediate staff. Furthermore, the development of a cooperative social institution, as this local area manpower group would hopefully become, is perhaps the most difficult area of management planning today. We need adequate research, therefore, followed by training and "extension" if we may use that well-established term for putting knowledge to work at the grassroots level.

Fortunately, there are patterns of organization and management aimed specifically at reducing conflict. Much of the research into the building of cooperative social institutions has been carried on by F. E. Emery and Eric Trist of the Tavistock Institute of Human Relations in London and by Professor Howard V. Perlmutter at Imede, Lausanne, Switzerland. This work, in turn, is based in part on the writing of Kurt Lewin, who once taught at the University of Iowa. Lewin, I suppose, has played a larger part in developing a truly scientific approach to human relationships and in eliminating frustration, particularly of people in large organizations, than any other single individual.

Building harmonious institutions may seem a far cry from manpower programs, but with a little reflection it is apparent that effective institutions are a necessity if we are to reduce the sufferings of poverty and help people realize their hopes and expectations. The Negro mother who must work but has no good place to leave her children must be under constant worry. We must have institutions and personnel in them that can provide effective services.

It is common knowledge that there has been conflict among the various manpower-oriented agencies. Conflict leads too often to settlements on the basis of power rather than the "higher synthesis" that can emerge from discussion and reasoning. Furthermore, the more agencies that are in conflict, the greater will be the tendency to reach for power to change the other party. The problems move upward to take the time of already overburdened executives. All concerned spend as much time in fighting each other as in serving their clients.

The well-constructed institution, on the other hand, is designed to avoid these collision courses as one of the most important considerations in social architecture. In the management of this institution, also, conflict generated by faulty organizational structure receives priority attention. In a more positive way, the management system emphasizes unity by using criteria of success that encompass all concerned. Evaluations are made in relation to such overall criteria. Committees are established to maintain an overall point of view in the development of programs. Persons who have an overall view are selected for managerial posts. Publicity arrangements are such that no agency tries to take all the glory, and neither do they fight out differences in the press. The list could be long, but my purpose here is merely to illustrate the possibilities for carrying on cooperative research to find the best ways of harmonizing operations of all those concerned with manpower programs.

But it takes more than good institution building to make for successful operations--important as that may be. The well-built institution is most likely, of course, to bring out the best in the staff who operate it, and conversely, the ineffective institution can be a prime source of frustration, which in turn brings out the worst. Dr. Norman Maier, who has done distinguished work on frustration theory, could tell us much about the suffering that goes on in the world, stemming from basically frustrated people who may "take it out," so to speak, on all those around them. His writings in management psychology are known internationally. There should be competent research into the application of his theories of human relations and group decision making to our problems of planning and guiding manpower programs.

The major institution on which all this research would be focused is our newest administrative device called "CAMPS," which is Federal shorthand for the Cooperative Area Manpower Planning System. If we can make it work, this may be the best thing that has happened administratively to our manpower program to date. The federal agencies concerned with manpower operations signed what might be called a compact to plan cooperatively and supervise the implementation of manpower programs. There is a national, regional, state, and local structure to this system. Designed primarily for cooperative work in the metropolitan areas, it has been adopted by most states as a state-wide method of working together.

It is my impression that neither the difficulty of such planning nor the full benefits of successful planning are fully appreciated by the federal departments concerned. For that reason I recommend a strong program of research to solve as many knotty problems as possible. None of the agencies or their local counterparts have similar boundaries. This is a difficult problem. The use of "functional economic areas" mentioned earlier is perhaps the best answer, since these are really the modern job market areas, generated by the superhighway, the supermarket, and all the various forces that have made for our agricultural revolution. The "functional economic area" permits greater specialization which is needed in view of our many new and difficult programs. Through the economies of scale we can still provide the same quality services to such areas as is provided in larger urban areas.

Then there is the problem of what kinds of data to use in developing the cooperative plans which are the heart of this new system. There is an obvious advantage in pooling data so that plans are based on as many as possible of the real manpower problems of an area. But what kinds of data are best suited to this? Who should gather it? How can data be translated into work loads to show the requirements for staff, equipment, and the like in the several agencies?

In my experience to date with CAMPS, I have found representatives of governors to be helpful in solving minor coordinating problems. There might well be research into what kinds of functions and staff a governor should supply for this purpose.

There is also a large unmet demand for research to establish desirable patterns of organization for local or state employment service offices. The "Youth Opportunity Centers" are a good example of where long-term research and consistent policies would have saved embarrassment and money as well. State agencies need long-term, stable policies in respect to local office facilities. Many central office organizations also need careful analysis and restructuring. As programs have been added, organizations have grown in size, but such questions as the most effective local and state office relationships have been left dangling. There are innumerable areas of management which need attention. Fortunately, within the employment service itself we find a management expert's dream, with 50 state agencies carrying out the same responsibilities. Even by use of the simple device of searching out the best practices in any one agency and making them available to all agencies we can move ahead rapidly.

Since greater decentralization is planned, another useful area of research would involve a planned sequence of decentralization of personnel, authority, and responsibility to the regional, state, and local areas. Even evaluations could be decentralized, with just enough sampling at higher levels to provide assurance that program goals were being met.

One of the most important research projects would involve the concept of the "active labor market policy" and the commitment to top quality work. Motivation is not easily inculcated unless the personnel have some sense of fulfillment in their work. By selecting people whose life goals match the major goals of the organization, we can build in a solid type of motivation that will last and make for good morale. There should be personnel research that will aid in the selection of such people and in developing them to their full capacities.

A favorite theme of an older generation of journalists was "the promise of American life." We need to make full use of the social sciences if we are to play our important part in the realization of that "promise." The behavioral sciences are revealing to us the extent to which we are all creatures of our environment. To the extent, therefore, that we can modify or eliminate those environmental influences which have an undesirable effect on large numbers of people, the behavioral sciences give us hope for the future.

It will be necessary to inject massive doses of social science research into our administrative structure, and it is equally important that the use of the social sciences be well balanced. Although economics, is an "uncertain science," it is already being used to good effect in our programs. Psychological research, which is more solidly grounded in an impressive body of verified knowledge, is being used hardly at all in either state agency personnel administration, supervisory and management processes, program research or our main line operation as a personnel agency. Still our most difficult target group, who make up the bulk of the 3.7 percent unemployed, must undergo various kinds of behavior modification based on psychological research and evaluation. To get tooled up for such research and to reduce the long lag between discovery and application lies at the heart of solving our manpower problems.

Chapter 22

Thoughts on Manpower Research from the Office of Economic Opportunity

David E. Knuti

OEO's view of Manpower can be summed up in two words--catholic and client-centered. OEO is interested in and participates in the manpower field, not because of responsibility in a particular area (such as training) but because of responsibility to a particular clientele--the disadvantaged. We have a dual responsibliity toward the poor: (1) to do what the poor want done to help themselves and (2) to do those things which give promise to a permanent decrease of the cause of poverty, both within the individual and within society as a whole. These interlocking concerns lead us quite directly into the manpower field. They lead us in a particular way. OEO's legislation is extremely flexible, but it requires concern for all those things which make up a concerted attack on poverty. In other words, if the client doesn't make it, then we have not made it, even if it is not, in a sense, "our fault."

We in OEO feel that there is a substantial body of experience which has demonstrated that for our constituents a complete range of services is necessary for success. Give or take a difference in arrangement and terminology, these services can probably be grouped under the following headings:

1. Outreach and recruitment: If the poor are to participate, they must be informed, and often personally invited. They are historically those who have been left out, who have been reluctant , or who have tried and lost hope.

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2. Intake: All services have a point of acceptance. How the community accepts the client for service is extremely important. We see the CAP-funded neighborhood center as the natural common ground for acceptance of the individual by all agencies.

3. Evaluation: Some estimate must be made of what is needed for the individual. This means everything from informed counseling to very sophisticated testing.

4. Prevocational training: There is much that precedes vocational training. The individual must be ready to be trained and ready to work. Such training includes counseling, training in work itself, and basic education.

5. Supportive services: This includes such things as medical examinations and corrections, family counseling, emergency financial assistance, and transportation. Supportive services do not really constitute a separate step but should be available as needed at all points in the progress of the trainee. It is part of good intake, evaluation, and prevocational counseling to identify and correct those nontraining but employment-related problems before an individual is placed on a job or in training.

6. Vocational training, institutional: This is the area which is commonly thought of when we say manpower. It is essential to many jobs, especially the better paid ones. It must be a prominent part of manpower planning, but not the only part.

7. Vocational training on the job: For most people, even with considerable training there will be a substantial portion of learning on the job. Studies have shown that most Americans have learned their occupation this way.

8. Placement: Jobs will have to be found and matched to clients.

9. Job development: If jobs are not there automatically they may have to be "developed." In other words an employer may have to be persuaded to accept the client, to reconsider his entry qualifications, or actually restructure the nature of the job itself.

10. Follow-up: The disadvantaged person will not be transformed completely by anything done in prevocational or vocational training. To succeed it is necessary to continue to help the individual in the crucial first few months on the job. Invariably as any group of disadvantaged people are placed on jobs some substantial number will have a financial crisis, conflict with a supervisor or family problem.

It is a truism that these services are not likely to be present in sufficient quantity and quality in any community. Moreover if they were present they would not be likely to be lined up in a coordinated fashion to provide concentrated, sustained assistance to the individual. More likely they are spread out all over the map under a number of separate and frequently hostile agencies. Each agency will be recruiting and accepting clients for service, using its own priorities and eligibility standards and taking whomsoever shows up. It is OEO's concern that these services first be established and then be so organized as to take institutional responsibility for the individual in a sustained sequence of comprehensive service. Therefore we are interested in everybody's business in the total system or service. We see no functional element as complete in itself.

This, of course, is a concern shared by many. A step toward better coordination has been taken this year with the establishment of the Cooperative Area Manpower Planning System. It requires all federally financed manpower programs to jointly plan next year's programs. A further development is the Concentrated Employment Program where a large pool of money from various statutes has been placed under one funding authority, the Manpower Administration, to be used to provide concentrated services to a compactly defined urban slum area.

But even after the concept of manpower as a comprehensive system is accepted, there is an amazing amount which is not known.

I. It would be useful to know in a systematic way the various approaches that have been tried in comprehensive programs. There has been an extremely wide divergence in the profile of manpower projects. Contrast the mix of resources between a "straight" regular MDTA Training Project (for example welding) with the kind of MDTA project represented by JOBS NOW in Chicago. In the straight MDTA Project there is only one element with any significant emphasis. This is the skill training itself. Although there may be screening beforehand, this is probably not the subject of any specialized effort but takes place in the local employment service office. By statute, there must be a job available prior to the request for training. Training is for 26 weeks in a welding shop of a public vocational school. In JOBS NOW, resources are allocated to a two-week assessment and orientation. The curriculum is the geography and transportation of the city, employer expectations, and consumer education. This is coupled with a program of testing. Intensive efforts go into job development since the program started with only unscreened low-income youth and no jobs. A substantial staff must, therefore, be involved in true job development. Employers are approached to alter their hiring habits and make a special effort to accommodate themselves to the clients of JOBS NOW. After two weeks of assessment the client is placed in what seems the most appropriate of the jobs developed by the staff. But this is not the end of JOBS NOW involvement. As part of the job development effort, the employer has been convinced to enter into a cooperative arrangement in support of the client during the crucial first weeks. This is institutionalized into the concept of "high support." To aid in this effort, JOBS NOW also has a substantial amount of its resources in follow-up supportive personnel, nonprofessional coaches. These help "coach" the client through the initial difficulties of job adjustment.

In all of this no skill training is provided by the JOBS NOW Project (although many placements are to MDTA-financed on-the-job training). I feel it would be useful just to document the variety of approaches and the apparent results of various mixes (acknowledging that reports of results are likely to be somewhat inadequate). This kind of study would highlight the kind of options that face manpower planners. This would be especially useful for rural areas where the exchange of information between projects and areas is extremely limited. It would be a great aid to both planners and laymen.

II. For such knowledge to be useful, other research would have to face up to the problem of what are the fundamental goals of manpower programs. We think manpower constitutes both the securing of employment and the development of employability. A great problem is the general lack of understanding as to what constitutes employability. People within our agency would break this down as follows: Employability is education, training, motivation, and those elusive twins--self-concept and self-projection. Traditionally our country has considered education and training within its public school system as the sole developers of employability (at least as far as the public has a responsibility to develop it). In dealing with disadvantaged people, the idea is fading that skill training is enough (or that those who do not fit into our skill training are not worth saving anyway). There are those who would maintain that with an acceptable base level of education (or even without it), motivation and self-projection are the most important factors in job success. At any rate, it would be useful to analyze what combination of elements actually does make for job success. It is essential to develop some measures for each of these elements. While reading ability and typing speed can be measured fairly well, motivation and self-development can hardly be measured at all. It is only after we know more about these components of employability that we will be able to make some sound decisions about what are our essential objectives and what is the most economical way to teach them.

III. Even with an optimum mix of program activities (of elements within a comprehensive program) there is a great deal of controversy about how to conduct each program element.

Mrs. Roslyn Kane of our CAP Manpower Division has written a short pamphlet on manpower planning in which she lists approximately 90 questions which face a community in developing a comprehensive manpower program, and her list is far from exhausting. As examples I would like to cover a few program areas. In the area of recruitment, urban manpower planners are unsuccessfully wrestling with the problem of "where the boys are." The problem of bringing and keeping Negro males in employment is baffling program planners. Some programs are bringing in more than 70 percent females. Getting males to accept skill training is even more difficult. Some training programs run 90 percent female. Many variables are discussed: size of stipend, course offered, program image, and recruitment methods. Basic education poses similar problems. There is a large number of basic education systems on the market. Which of these systems actually does the best job? OEO has recently financed a study by Greenleigh Associates comparing several basic education systems. This study produced inconclusive results. Would it not be possible to follow up and provide for program planners some more conclusive results on basic education systems? Likewise there are wide variations in delivery methods. Most of the adult basic education money spent through the state departments of education has gone for separate programs run during the off hours of public schools. OEO has wondered whether it is possible to teach reading and figuring outside public school classrooms. Can basic education be effectively taught as part of the daily routine of, for example, a Neighborhood Youth Corps Program (if necessary out under a shade tree)? In the Greenleigh Associates study, matched groups found that noncertified high school graduate teachers actually had a higher degree of success in teaching basic education. What were the necessary conditions for their success? How much of basic education in this country reflects these findings? Given the question of basic education as part of the NYC project, could a nonprofessional crew chief give effective instruction? In this case, more information will have to be made available to guide program directors and the public schools. However, the number of people served and the way in which they are served will be greatly affected by the way these variables are manipulated in project implementation.

In the area of vocational training there are studies to indicate that most Americans have not learned their job in the classroom but through instruction on the job or just "picking it up." Given the high cost of MDTA stipends and training and the reluctance of hard-core males to accept prolonged periods of training, great hope would seem to lie in the area of on-the-job training in industry. At this very moment the forms of on-the-job training are proliferating. There is on-the-job training (OJT) administered by the Bureau of Apprenticeship and Training under MDTA. The Neighborhood Youth Corps is launching a program of Work Training in Industry (WTI) which will couple on-the-job training with a Youth Corps experience. OEO is about to fund a number of demonstration programs under the loose heading of Success Insurance which will subsidize the acceptance and training of disadvantaged employees. It would seem that there is a real need to evaluate the various approaches on a comparative basis. Moreover to fully profit from these newly available tools there seems to be a real need to investigate the extent and types of opportunities for training in industry.

OEO has recently funded a study by the Greenleigh Associates of training opportunities in industry in the city of Indianapolis. The findings indicated that there were unexploited training opportunities. The study suggested some approaches to cooperative action with the public manpower development sector. Such studies should probably be done for other areas and various approaches tested with a sound research design built in.

The government is paying huge sums of money each year for work-training experience programs such as the Neighborhood Youth Corps, the Work Experience Program and Operation Mainstream. Yet there is very little information as to what work experience actually produces. There is a theoretical belief that work experience provides prevocational training. If prevocational training means training in motivation and self-concept and projection, then it should be evaluated in those terms. To my knowledge very little of this is taking place. It would be useful to know what actually takes place within the trainee during work experience and how this relates to employability in general. Various approaches are possible to work experience. For example Neighborhood Youth Corps enrollees can be placed on the jobs in agencies or they can work on controlled work crews. It is my understanding that Mobilization For Youth in New York City is doing a research project comparing different approaches with matched groups of NTC enrollees in order to compare effectiveness. More work in this area is needed.

IV. However, before research can proceed to answer these operational questions modified research tools must be developed. The great obstacle to research has been the requirements of on-going operations. Researchers have generally been limited to the establishment of matched control groups. These are extremely difficult for a program to maintain in operation. In addition, the rigid controls of traditional research methods cannot be accepted in an evolving project where adaptation to experience is necessary. New research procedures will be required which do not strangle operations. It must be remembered these operations involve the fate of human beings. Perhaps some looser standards of scientific objectivity can be developed. But the fact remains that a tremendous amount of money is being spent right now. It will not wait for research. We hope that researchers will find the way to spend it more wisely.

V. It would also be useful to have some studies of how we got where we are and what is actually taking place at the moment. There are fine materials (such as OEO's catalogue of federal programs) gathering information about all federal manpower programs. However, for the program administrator there is a need for knowledge in greater depth. Without an understanding of history it is often extremely difficult to understand why legislation reads the way it does or an agency behaves in a certain way. This ignorance of historical factors often breed intolerance in project people. Some lively political scientist should take on the task of explaining the various pieces of manpower legislation and place them in historical context. In the area of current history one could cite any number of extremely dramatic developments. Someone should write the history of the Concentrated Employment Program. This program will be launching huge manpower efforts in approximately 25 cities across the country. An average of $5 million is to be spent in each locale. It does not take much imagination to realize the intensity of controversy resulting. A study of what happened would provide both an insight into the present balance of forces in the manpower community and as much drama as the average novel. Such a book would be a cross between the Perils of Pauline and the Federalist Papers. Unfortunately, it would probably confirm Baron Uxenstern's dictum, which, if I remember correctly was, "My son, my son, you have no idea with what little reason the world is governed."

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